Initial Study and Proposed Mitigated Negative Declaration

Coast Pump Station Raw Water Pipeline Replacement Project

Santa Cruz, California

August 2019

Prepared for:

City of Santa Cruz Water Department

Prepared by:

HDR, Inc.

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Contents

Acronyms and Abbreviations

BMP	best management practice
Caltrans	California Department of Transportation
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
City	City of Santa Cruz
CNDDB	California Natural Diversity Database
CNPS	California Native Plant Society
dBA	decibels on the A-weighted scale
FTA	Federal Transit Administration
ft-lb	foot-pound
hp	horsepower
L_{max}	maximum noise level
LOS	level of service
MBARD	Monterey Bay Air Resources District
MM	mitigation measure
NAHC	California Native American Heritage Commission
NMFS	National Marine Fisheries Service
PPV	peak particle velocity
SWPPP	Stormwater Pollution Prevention Plan
USFWS	United States Fish and Wildlife Service
Water Department	City of Santa Cruz Water Department

Project Summary

Project title: Coast Pump Station Raw Water Pipeline Replacement Project

Lead agency name and address: City of Santa Cruz Water Department (Water Department), 212 Locust Street, Suite C, Santa Cruz, CA 95060

Contact person and phone number: Jessica Martinez-McKinney, City of Santa Cruz Water Department, (831) 420-5322

Project location: The project is located on the northern side of the city of Santa Cruz. The west side of the project connects with the City of Santa Cruz's (City) Coast Pump Station and runs along the contiguous property to the north. The east side of the project surfaces east of the San Lorenzo River at the western terminus of Crossing Street, Santa Cruz, CA, 95060. The project footprint is primarily on City-owned and publicly owned land, with the exception of a possible secondary staging on the property owned by the Santa Cruz Cemetery Corporation. The City is coordinating with this land owner.

Project sponsor's name and address: Heidi R. Luckenbach, City of Santa Cruz Water Department, 212 Locust Street, Suite C, Santa Cruz, CA, 95060

General Plan designation: The proposed project area is currently used for low-to-medium-density residential, natural areas, community facilities, and industrial uses.

Zoning: The proposed project area is zoned for floodplain, residential, industrial, and public facilities by the City of Santa Cruz.

Description of project: The proposed project would involve the replacement of a raw-water pipeline segment aligned under the San Lorenzo River in the city of Santa Cruz. Construction of the segment would use microtunneling to drill an approximately 225-foot west-to-east tunnel under the river within which the replacement 24-inch-diameter pipeline would be installed. This new pipeline would be connected to the existing raw water conveyance system on the east and west banks of the river, each side connected via approximately 150 feet of pipe using open trenching. The existing 20-inch-diameter steel pipeline segment would be capped and abandoned in place. See the full Project Description below for additional information.

Surrounding land uses and setting – briefly describe the project's surroundings: The proposed project is located in an area used predominantly for residential and industrial uses. The San Lorenzo River runs through the project area flowing from north to south.

Other public agencies whose approval is required (e.g., permits, financing approval, or participation agreement): California Department of Fish and Wildlife – issuing agency of California Fish and Game Code 1602, Lake and Streambed Alteration Agreement and California Regional Water Quality Control Board – Enrollment under the National Pollutant Discharge Elimination System (NPDES) General Permit for Storm Water Discharges Associated with Construction and Disturbance Activities (Construction General Permit).

Environmental Factors Potentially Affected

The environmental factors checked below could be affected by this project, involving at least one impact that is a "Potentially Significant Impact" or "Potentially Significant Unless Mitigation Incorporated" as indicated by the checklist on the following pages. All impacts identified for this project can be mitigated to a less-than-significant level.

☐ Aesthetics	☐ Agriculture and Forestry Resources	☐ Air Quality
☒ Biological Resources	☒ Cultural Resources	☐ Energy
☒ Geology and Soils	☐ Greenhouse Gas Emissions	☐ Hazards and Hazardous Materials
☐ Hydrology and Water Quality	☐ Land Use and Planning	☐ Mineral Resources
☒ Noise	☐ Population and Housing	☐ Public Services
☐ Recreation	☐ Transportation	☒ Tribal Cultural Resources
☐ Utilities and Service Systems	☐ Wildfire	☐ Mandatory Findings of Significance

Determination

On the basis of this initial study, I find that, although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent (City of Santa Cruz), including the mitigation measures identified herein. Therefore, a Mitigated Negative Declaration has been prepared.

Heidi R Luckenbach

Heidi R. Luckenbach, Deputy Director

August 1 2019

Date

Mitigation Measures

The following mitigation measures (MM) have been identified during the evaluation of environmental resources to reduce all impacts that could result from project implementation to less than significant. These measures are referenced, as appropriate, in the assessments of individual resources included in Evaluation of Environmental Impacts section.

MM-BIO-1: Biological Monitoring and Worker Environmental Awareness Training. A qualified biologist(s) would monitor construction activities that could potentially affect sensitive biological resources. The amount and duration of monitoring would depend on the project specifics and would be determined by the qualified biologist. In addition, a qualified biologist would conduct mandatory contractor/worker awareness training for construction personnel. The awareness training would be provided to all construction personnel before the project starts to brief them on the locations of sensitive biological resources, how to identify special-status species, the need to avoid impacts on biological resources (e.g., plants, wildlife, and aquatic resources), and the reporting requirements and any penalties for not complying with biological mitigation requirements. If new construction personnel are added to the project, the contractor would require them to receive the mandatory training before starting work.

MM-BIO-2: Preconstruction Clearance Surveys. A qualified biologist would conduct preconstruction clearance surveys for special-status species, including western pond turtle, Santa Cruz black salamander, California giant salamander, coast range newt, and San Francisco dusky-footed woodrat, and for special-status bats prior to the start of construction activities on or before the first scheduled day of work. If individuals are found within or directly adjacent to the project area, the area would be left unaffected until the individual(s) have left the area or a relocation decision has been made in consultation with the California Department of Fish and Wildlife (CDFW). If woodrat nests or bat roosts are found within or directly adjacent to the project area, appropriate no-disturbance buffers would be implemented to minimize impacts on woodrats or roosting bats during construction of the project. The size of no-disturbance buffers would be determined by a qualified biologist based on the species, activities proposed in the vicinity of the nest or roost, and topographic and other visual barriers.

MM-BIO-3: Wildlife Entrapment Avoidance. If a trench or pit measuring 1 foot or greater in depth must be left open at the end of a day's construction activities, the open areas would be either covered or fenced, or the end of any open walls would be ramped at an approximate 2:1 slope to allow any wildlife that enters the excavation to escape. A qualified biologist may approve the use of an alternative method to prevent ingress or entrapment.

MM-BIO-4: Migratory Bird, Special-status Bird, and Raptor Surveys. If feasible, tree and vegetation clearing would be conducted outside the migratory bird (February 1 to August 31) nesting season. However, if clearing and/or construction activities will occur during the nesting season, then preconstruction surveys for special-status birds and other migratory bird and/or raptor species would take place no more than 7 days prior to the beginning of construction within 250 feet of suitable nesting habitat, if feasible. If the preconstruction surveys do not identify any nests within areas potentially affected by construction activities, no further mitigation would be required. If the preconstruction surveys do identify nesting bird species within areas that could be affected by site construction, MM-BIO-5 would be implemented.

MM-BIO-5: Nesting Bird Avoidance. If active nest sites are identified within the survey areas, to avoid construction or access-related disturbances to migratory bird nesting activities, a no-disturbance buffer would be established for all active nest sites before any project construction activities begin. The size of no-disturbance buffers would be determined by a qualified biologist based on the species, activities proposed in the vicinity of the nest, and topographic and other visual barriers.

MM-BIO-6: No Net Loss of Riparian Canopy. No net loss of riparian canopy will be achieved through impact avoidance, minimization, and/or compensatory mitigation. Mitigation for any permanent impacts on riparian canopy shall be provided at a minimum 1:1 ratio. Mitigation may include on-site or off-site restoration, in-lieu fee payment, or purchase of mitigation credits at a CDFW-approved mitigation bank. Mitigation as required in regulatory permits issued through CDFW may be applied to satisfy this measure.

MM-BIO-7: Tree Avoidance. Existing riparian vegetation, oaks, and other native tree species shall be retained to the extent feasible. A Tree Protection Zone (TPZ) shall be established around any tree or group of trees to be avoided. The TPZ shall be delineated by an ISA Certified Arborist. The TPZ shall be defined by the radius of the dripline of the

tree(s) plus one foot. The TPZ of any protected trees shall be demarcated using fencing that shall remain in place for the duration of construction activities.

No heavy equipment or machinery shall be operated within the TPZ unless under the supervision of an ISA Certified Arborist. Grading shall be prohibited within the TPZ. No construction materials, equipment, or heavy machinery shall be stored within the TPZ.

MM-BIO-8: Minimization of Root Damage. If trenching or other ground disturbance must occur in the TPZ, it will be done with the approval and under the supervision of an ISA Certified Arborist. If roots need to be pruned, roots over two inches in diameter shall be pruned by hand with loppers, handsaw, reciprocating saw, or chain saw rather than left crushed or torn. When completed, exposed roots shall be kept moist with burlap or backfilled within one hour.

MM-CUL-1: Personnel Training and Development of Monitoring Program by Archaeologist. An archaeologist meeting the Secretary of the Interior's Professional Qualification Standards shall be retained to oversee and carry out the archaeological mitigation measures as appropriate. The archaeologist shall conduct a pre-excavation meeting with construction personnel who would be briefed regarding the proper procedures if buried cultural materials are encountered. The archaeologist shall also develop an appropriate monitoring program and schedule and select a qualified archaeological monitor to be approved by the Water Department.

MM CUL-2: Archaeological and Tribal Monitoring. A qualified archaeological monitor, as assigned and directed by the project archaeologist and approved by the Water Department, shall monitor excavation activities on the project site within Holocene-epoch (11,700 years before present) sediments that have not been previously disturbed. These sediments are likely to be encountered during excavation for the microtunneling pits on either side of the river and the open trenching for the waterline connectors. Pre-Holocene sediment, disturbed sediments, and microtunneling slurry spoils do not need to be monitored. Per the request of the Amah Mutsun Tribal Band, a qualified Native American monitor may also be onsite for the same duration as the archaeological monitor.

If archaeological or cultural resources are unearthed during ground-disturbing activities, the archaeological monitor, in coordination with the Native American monitor if present, shall halt or redirect such activities away from the area of the find to allow evaluation and immediately notify the Water Department. Work may continue outside the vicinity of the find, at a sufficient distance to be determined by the archaeological monitor and Native American monitor as necessary to provide compliance with these mitigation measures and the archaeological monitoring program. Deposits shall be treated in accordance with applicable federal, state, and local guidelines, including those set forth in California Public Resources Code Section 21083.2. In addition, if it is determined that an archaeological site is a historic resource, the provisions of Public Resources Code Section 21084.1, CEQA Guidelines Section 15064.5, and Santa Cruz Municipal Code Section 24.12.430.9 shall be implemented.

The archaeologist shall evaluate the discovered resource(s) and, if they are significant, notify the City of Santa Cruz Water Department and then develop an appropriate treatment plan. Treatment plans shall consider preservation of the resource(s) in place as a preferred option. The archaeologist, in coordination with any participating Native American tribes, shall then prepare a report to be reviewed and approved by the Water Department. The report shall describe any resource(s) unearthed, the treatment of such resource(s), and the evaluation of the resource(s) with respect to the California Register of Historic Resources. If the resource(s) are found to be significant, a separate report detailing the results of the recovery and evaluation process shall be prepared. The Water Department shall designate one or more appropriate repositories for any cultural resources that are uncovered.

MM-CUL-3: Human Remains. If human remains are discovered during ground-disturbing activities or project construction, work shall be halted within at least 150 feet of the discovery location, and at a greater distance if determined necessary by the archaeologist meeting the Secretary of the Interior's Professional Qualification Standards, and within any nearby area reasonably suspected to overlie human remains (Public Resources Code Section 7050.5 and Santa Cruz Municipal Code Section 24.12.430.9). The Santa Cruz County Coroner shall be notified immediately to determine whether the cause of death must be investigated. If the coroner determines that the remains are of Native American origin, it is necessary to comply with state laws regarding the disposition of Native American burials, which fall within the jurisdiction of the California Native American Heritage Commission (NAHC) (Public Resources Code Section 5097). In this case, the coroner will contact NAHC. The descendants or most likely descendants (MLD) of the deceased will be contacted, and work will not resume until the MLD have made a recommendation to the Water Department regarding the appropriate means of treatment and disposition, with appropriate dignity, of the human remains and any associated grave goods, as provided in Public Resources Code Section 5097.98.

MM-GEO-1: Paleontological Resources. Before the start of construction activities, construction personnel involved with earth-moving activities would be informed of the proper notification procedures if fossils are encountered. If paleontological resources are encountered during earth-moving activities, the construction crew would immediately stop work, and a qualified paleontologist would evaluate the resource and prepare a proposed mitigation plan based on the situation.

MM-NOI-1: Machinery Maintenance. All on-site machinery shall be maintained in good working order and lubricated as necessary to minimize unnecessary squeals, groans, and other noise. All cabinets, panels, covers, shrouds, and similar components shall be securely fastened to ensure that they do not create excessive noise due to vibration. All machinery to be used on-site shall be equipped with the best available exhaust mufflers and any applicable “hush kits.”

MM-NOI-2: Nighttime Machinery. During nighttime work, all unnecessary machinery shall be turned off, any delivery and hauling trucks shall not sit with their engines idling for periods exceeding 5 minutes, and the use of noise producing signals, including horns, whistles, alarms, and bells shall be for safety warning purposes only.

MM-NOI-3: Construction Noise Coordinator. Notify residents within 500 feet of any planned nighttime activities within two weeks of planned activities. A “Construction Noise Coordinator” will be identified. The contact number for the Construction Noise Coordinator will be included on notices distributed to neighbors regarding planned nighttime construction activities. The Construction Noise Coordinator will be responsible for responding to any local concerns or complaints about construction noise. When a concern or complaint is received, the Construction Noise Coordinator shall notify the City, determine the cause of the noise complaint, and implement measures to resolve the complaint, as deemed acceptable by the City.

Project Description

The City of Santa Cruz Water Department proposes to replace approximately 525 feet of the Coast Pump Station raw water pipeline in a segment aligned under the San Lorenzo River in Santa Cruz, California (Figure 1). This segment of the existing pipeline varies in diameter and includes portions that are both 20 and 24 inches in diameter. The replacement pipeline would have a single diameter of 24 inches. The replacement 24-inch-diameter pipeline would provide a negligible increase in capacity and would connect to existing points at each end of the segment proposed for replacement. The existing pipeline would remain in use until the new pipeline segment is operational, at which time the existing pipeline segment would be capped and abandoned in place.

Approximately 225 feet of the replacement pipeline would be aligned under the San Lorenzo River and installed within a 36-inch-diameter carrier steel casing via microtunnel technology. The proposed microtunnel is aligned approximately 80 feet north of the existing pipeline and is adjacent to two treated-water pipelines that would not be affected by the proposed project. The location of the proposed replacement pipeline was selected based on environmental constraints, operational constraints, geotechnical feasibility, and optimal constructability. The microtunnel alignment was sited to avoid existing utilities and was sited where conditions were optimal for this type of construction. The remaining 300 feet of pipeline would be installed via open trenching on the east and west sides (approximately 150 feet on each side) of the river and would connect the microtunnel segment to the existing end points.

The existing pipeline is one of the primary transmission lines for water supply to the Graham Hill Water Treatment Plant. The current pipeline is degraded and has a history of leaking. The proposed project is needed in order to fix this critical pipeline segment and prevent further leaks and damage.

The project footprint is primarily on City-owned and publicly owned land, with the exception of a possible secondary staging on the property owned by the Santa Cruz Cemetery Corporation. The Water Department is coordinating with this private land owner.

A construction period of approximately 8 to 9 months is planned, beginning in the spring of 2020, and will include both daytime and nighttime work.

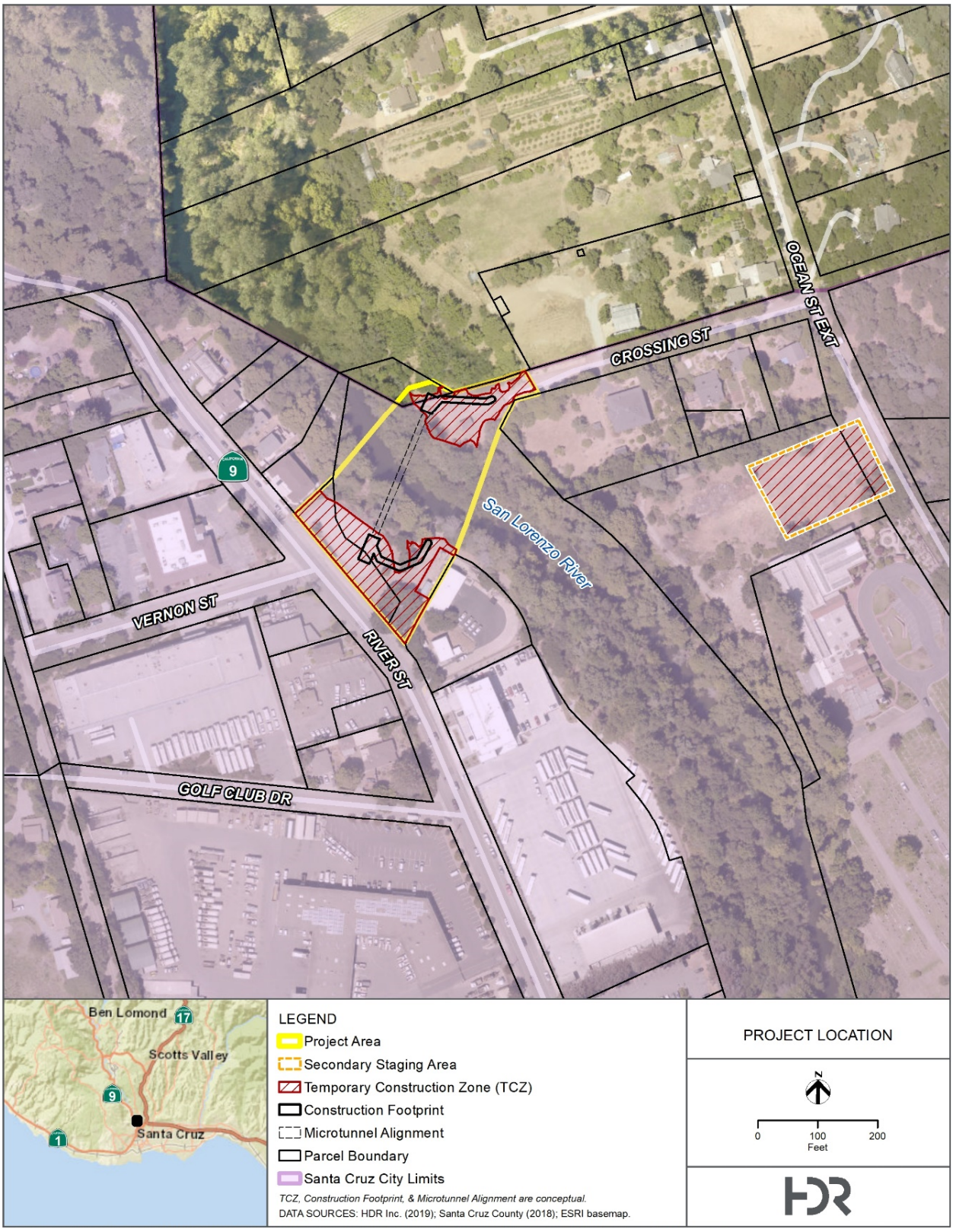

Figure 1. Proposed Project Location

Details regarding the activities required to complete the proposed project are provided below.

Site Preparation

The temporary construction zone for the proposed project would include City-owned parcels, a public right-of-way, and privately owned land on either side of the San Lorenzo River (Figure 1). Privately owned land is being considered for staging only. The project area as a whole has access from River Street to the southwest and Crossing Street to the northeast.

Construction stormwater best management practices (BMPs) would be used on site to prevent erosion of soil and to control the transport of sediment. Before starting work, the limits of the construction zone would be fully fenced by the contractor using a combination of silt fence, orange construction fence, or other exclusionary measures as appropriate to exclude wildlife from entering the work area, to prevent sediment from entering nearby aquatic resources, and to confine construction activity to the defined work space. The fences would be inspected by the construction crew daily, and any holes or damage would be patched immediately. All BMPs would be in place before construction activities begin and would remain until construction activities are completed. Applicable BMPs would be maintained until all up-slope soils are stabilized.

Three construction entrances are proposed and would be constructed to access the eastern parcel, western parcel, and staging area along River Street and the Ocean Street Extension. The dimensions of the constructed entrances would be, at a minimum, 10 feet wide by 50 feet long. Per the California Stormwater Quality Association BMP Handbook, the stabilized construction entrances would be underlain by filter fabric, with at least 12 inches of clean, crushed aggregate placed on top to match the grade of the existing paved roadway. A portion of the construction entrances would have corrugated steel panels placed on top of the aggregate to provide additional stabilization for incoming trucks. In addition, sediment barriers would be installed perpendicular to the entrances in order to channelize runoff and trap sediment, thereby preventing runoff from flowing off site toward River Street.

As part of the project Stormwater Pollution Prevention Plan (SWPPP) required for the Construction General Permit, if rain is expected, additional protection would be installed before the storm. The exact methods would be determined by the contractor, but some examples might be sandbag barriers, silt fence lined with fiber rolls at the base, or a temporary drainage swale. This additional protection would reduce the potential for runoff from the site to affect adjacent residences.

All ground breaking, as well as all temporary disturbance that would result from the movement of construction equipment and personnel, would be confined to the temporary construction zone. Trees, shrubs, and riparian vegetation would be avoided to the greatest extent possible. Should tree or vegetation removal be deemed necessary, all removal would comply with local ordinances and policies. The undeveloped area on the northern extent of the Santa Cruz Memorial Cemetery parcel (see Figure 1) would be temporarily used for supplemental project staging. No grading or subsurface work is proposed at this supplemental staging area.

Lighting could be required during microtunneling construction activities during the nighttime or at equipment staging areas. All lighting used at construction site, either for nighttime construction activities or at staging of equipment, would be directed toward the active construction area and away from residences. Potable water for workers' health and personal needs would be brought to the project site by the contractor. Limited amounts of water would be required for dust suppression on roads and at spoils and staging areas; however, these requirements for water would be short-term and temporary during construction.

To reduce the generation of fugitive dust throughout project implementation, the construction contractor will be required to prepare and implement dust control measures at the construction and staging areas, which will include: water all active construction areas as needed based on the type of construction activity, soil, and wind exposure; maintain at least 2-feet of freeboard, or cover dirt and loose materials, in haul trucks throughout transportation; cover inactive storage piles and stock piles of dirt; and sweep any roadways/paths if loose soil material remains at the end of the work day.

As necessary, the project will comply with MBARD Rule 424, National Emissions Standards for Hazardous Air Pollutants. Rule 424 defines the investigation and reporting requirements for asbestos which include surveys and advanced notification on structures being renovated or demolished. Air District notification will be required at least ten

days prior to renovation or demolition activities. If old underground piping or other asbestos containing construction materials are encountered during trenching activities, Rule 424 may also apply.

Given the close proximity of residences, the City will comply with the MBARD's recommendation to use cleaner construction equipment that conforms to the Environmental Protection Agency's Tier 3 or Tier 4 emission standards. Wherever feasible, construction equipment will use alternative fuels such as compressed natural gas, propane, electricity or biodiesel.

Microtunneling

The new pipeline segment and associated steel casing located under the river would be installed using microtunnel technology. This method was chosen because it would allow the raw water pipeline segment to be installed with the least disruption to the river bed, bank, and riparian areas compared to other pipe installation methods.

The proposed microtunnel would be launched from the west side of the river from an approximately 20-foot by 45-foot jacking pit at approximately 36°59'26.67" N, 122°1'54.02" W, on the west side of the river. The jacking pit would be excavated to an estimated depth of 72 feet. The microtunnel would reemerge from a receiving pit at approximately 36°59'28.99" N, 122°1'51.64" W, on the east side of the river. The receiving pit would be smaller than the jacking pit and would be excavated to an estimated depth of 51 feet. The depth of the receiving pit would be substantially less than that of the jacking pit since the surface elevation on the east side of the river is approximately 20 feet lower than the launch location to the west. The work areas on each side of the river would include a stockpile area for excavated material. These stockpile areas would be surrounded by exclusionary fences to contain the excavated material.

The jacking and receiving pits would be excavated using an excavator or backhoe. The pits would be outfitted with water inflow controls and with watertight shoring to reduce the potential for the pits to collapse during construction. The shoring likely would be installed using a pile driver (vibratory or impact) or an auger with a drill rig. Water encountered during pit excavation would be placed into a settling tank before being trucked to a nearby sewer main for discharge.

Once the jacking and receiving pits are constructed, one 36-inch-diameter steel casing would be installed to provide the underground crossing for the new water pipeline segment. The microtunnel would begin at the jacking pit and would head northeasterly toward the opposite river bank and receiving pit. The microtunnel profile would be an estimated depth of 24 feet below the river bottom and would follow a slight upward trajectory. The microtunnel would reemerge into the receiving pit located beyond the top of the eastern bank of the San Lorenzo River. Once completed, the new 24-inch-diameter water pipe segment would be placed inside the steel casing. The new water pipe segment would be attached to two riser pipes placed vertically within the jacking pit (72 feet tall) and receiving pit (51 feet tall). These riser pipes would function as the vertical connection between the pipe under the river and the pipes being installed via open trenching. Access holes would be installed over these connections.

The proposed jacking pit would be located in a highly disturbed, City-owned, unpaved lot along River Street that was previously used as Water Department storage. This area allows space for construction staging and access for heavy equipment. The staging area near the jacking pit would include the microtunneling boring machine and associated equipment. The receiving pit location is characterized as a disturbed clearing just north of a small Water Department outbuilding (Tait Well). Both the jacking and receiving pits would be placed beyond the riparian edge, thereby fully avoiding all vegetation associated with the riparian corridor of the San Lorenzo River.

Most work would be planned for daytime hours (between 8 am and 6 pm); however, for the short period when microtunneling is in progress, limited nighttime activities might be required to avoid tunnel failure during boring.

If cracks or fissures exist in the substrate below the San Lorenzo River, there is a possibility that fluid used in the drilling could move through the cracks and exit at the surface. This is known as an inadvertent drilling fluid release, or "frac-out." Frac-out is a risk only during microtunneling operations, which would not last longer than 3 weeks. Detailed planning and management measures, as well as corrective actions to be documented and taken in the event of a release of drilling fluid, would be included in an Inadvertent Release Contingency Plan, to be submitted to CDFW for review at least 60 days before microtunneling begins. The Inadvertent Release Contingency Plan will include the following components: project description, drilling design, drilling fluids, monitoring, notification procedures, and containment and remediation. The plan would be implemented during microtunneling to detect and respond to a potential release of drilling fluid.

Open Trenching

Two sections of 150-foot pipe totaling approximately 300 feet in length would be installed via open trenching on both sides of the river. These sections, along with the riser pipes, would be used to connect the two ends of the microtunnel portion of pipe to the existing raw water pipeline. The western section would consist of approximately 150 feet of pipe that would connect the microtunneled portion of pipe at the jacking pit side to the existing 20-inch-diameter water main near the Coast Pump Station. The eastern section would consist of an additional approximately 150 feet of pipe running southeast from the exit pit providing a connection to the 24-inch-diameter raw water main east of the outbuilding.

Trenches would be excavated with a backhoe or similar excavating equipment. The trenches would be a maximum of 10 feet wide and at least 60 inches deep, depending on depth of the pipe. Pipes would be placed immediately after the trenches are excavated. The new portions of the pipeline would be made of polyethylene-encased ductile iron pipe (DIP) and would be connected to the existing pipelines.

Site Restoration

After microtunneling and open trenching operations are completed, the drill pits and trenches would be backfilled. Previously excavated uncontaminated soils and debris stored on site would be used to backfill the drill pits and trenches. Construction debris and excess material requiring disposal in a landfill would be hauled off site to a suitable facility. All exposed and/or disturbed areas resulting from construction activities would be returned to their original contour and grade, and vegetated areas would be restored using locally appropriate native grass and forb seeds. Seeded areas would be covered with broadcast straw and/or jute-netted.

Schedule

A construction period of approximately 8 to 9 months is planned, currently scheduled to begin in the spring of 2020. Estimated work hours are from 8 am to 6 pm, Monday through Friday. Limited nighttime construction activities could occur over a matter of days; this would be limited to courses of continual daytime and nighttime work during microtunneling operations to avoid tunnel failure. Nighttime work would be limited to what is minimally required to complete the project within the proposed schedule.

It is projected that a maximum of 15 workers would be on site at any given time. Figure 2 provides a proposed construction schedule.

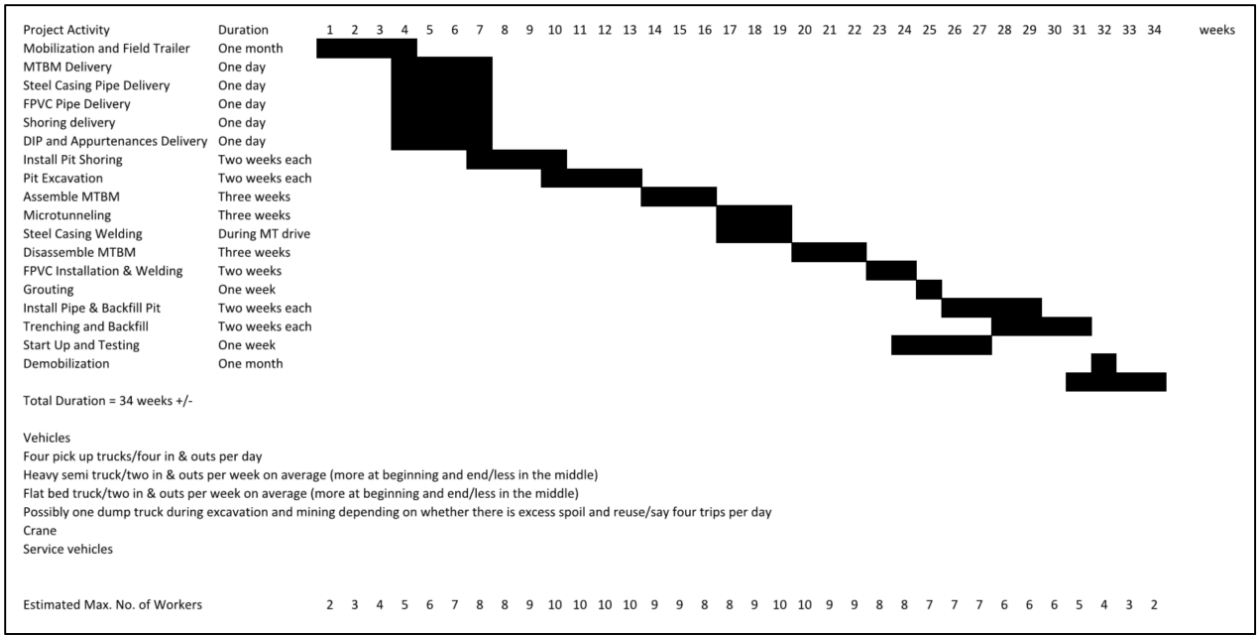

Figure 2. Proposed Project Schedule

Equipment

The construction equipment expected to be required for the proposed project includes the following:

- Tunnel boring machine*
- Welding machine
- Four pickup trucks
- Heavy semi-truck
- Flatbed truck
- Dump truck
- Crane*
- Service vehicles
- Generators*
- Refueling truck
- Sump pump
- Excavator
- Pile drivers

* These pieces of equipment would also be required during nighttime activities.

If portable construction equipment that is used for project implementation includes engines 50 horsepower (hp) in size or greater, the City will comply with required permits issued by MBARD, in compliance with the California Air Resources Board regulations.

Evaluation of Environmental Impacts

This Environmental Checklist follows the recently revised CEQA Guidelines Appendix G Initial Study format and includes a project-level analysis of all CEQA impact categories for the proposed project. The purpose of this Initial Study is to provide a basis and justification to substantiate the level of CEQA documentation. The City of Santa Cruz Water Department has concluded though the findings in this Initial Study that, with implementation and adoption of mitigation measures, implementing the proposed project would not result in significant impacts on the environment.

Aesthetics

Environmental Issue Area:	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less-than-Significant Impact	No Impact
Except as provided in Public Resources Code Section 21099, would the project:				
a) Have a substantial adverse effect on a scenic vista?	☐	☐	☐	☒
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	☐	☐	☒	☐
c) In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage points). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?	☐	☐	☐	☒
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	☐	☐	☒	☐

Environmental Setting and Impact Analysis

a) **No Impact.** The proposed project area is located along the San Lorenzo River in a predominantly industrial and residential area (City of Santa Cruz 2019). There are no identified scenic views or vistas in the vicinity of the proposed project area (City of Santa Cruz 2012); therefore, there would be no impacts on scenic views or vistas from the proposed project.

b) **Less-than-Significant Impact.** There are no officially designated state scenic highways in Santa Cruz County. Highways 1, 9, and 17 are listed as eligible state scenic highways but are not yet officially designated (CA DOT 2011). The proposed project does not include any impacts on scenic resources. Therefore, the proposed project would have a less-than-significant impact on scenic resources within a state scenic highway.

c) **No Impact.** The proposed project area is located in an urbanized area and is zoned for floodplain, residential, industrial, and public facilities (City of Santa Cruz 2019). Short-term visual effects include surface disturbance associated with the replacement of underground facilities. These activities are compatible with existing zoning and land uses. Therefore, the proposed project would have no impact on scenic quality.

d) **Less-than-Significant Impact.** The proposed project could create a new source of substantial light as a result of work after daylight hours. Short-term night construction would occur for a few days and may require night time lighting. Construction area lighting will be localized because of the proximity to residents and would not result in a substantial change permanently affecting night time views. Therefore, as described in the Site Preparation section of the Project Description, impacts from construction lighting to residents would be minimized to a less-than-significant level.

References

[CA DOT] California Department of Transportation. 2011. California Scenic Highway Mapping System. Internet web site: http://www.dot.ca.gov/hq/LandArch/16_livability/scenic_highways/index.htm. Accessed April 2, 2019.

City of Santa Cruz. 2012. City of Santa Cruz 2030 General Plan. Internet web site: http://www.cityofsantacruz.com/home/showdocument?id=33418. June 2012. Accessed April 2, 2019.

City of Santa Cruz. 2019. City of Santa Cruz Zoning Districts Map. Internet web site: https://www.cityofsantacruz.com/home/showdocument?id=8090. Accessed March 29, 2019.

Agriculture and Forestry Resources

Environmental Issue Area:	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the project:				
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	☐	☐	☐	☒
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☐	☒
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?	☐	☐	☐	☒
d) Result in the loss of forest land or conversion of forest land to non-forest use?	☐	☐	☐	☒
e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?	☐	☐	☐	☒

Environmental Setting and Impact Analysis

a) **No Impact.** The proposed project area is located in an urbanized area and is zoned for floodplain, residential, industrial, and public facilities (City of Santa Cruz 2019). A small parcel of grazing land is located one-tenth of a mile west of the proposed project area, and a small parcel of prime farmland is located one-tenth of a mile north of the proposed project area (DOC 2016). The area where proposed construction would occur is not designated as farmland by the California Resources Agency. The proposed project would not convert land designated as prime farmland, unique farmland, or farmland of statewide importance (farmland) in the Farmland Mapping and Monitoring Program and, therefore, the proposed project would have no impact.

b) **No Impact.** The proposed project area is located in an urbanized area and is zoned for floodplain, residential, industrial, and public facilities (City of Santa Cruz 2019). Zoning is consistent with the methods of temporary construction and land uses associated with the proposed project (City of Santa Cruz 2012). Therefore, the proposed project would have no impact on agriculturally zoned or Williamson Act contract land.

c) **No Impact.** The proposed project area does not contain land zoned for forest land, timberland, or timberland production (City of Santa Cruz 2019). Therefore, the proposed project would have no impact on land zoned as forest land, timberland, or timberland production.

d) **No Impact.** The proposed project area does not contain land zoned for forest land, timberland, or timberland production (City of Santa Cruz 2019). Therefore, the proposed project would have no impact and would not result in the loss of forest land or conversion of forest land to non-forest use.

e) **No Impact.** The proposed project area does not contain land zoned for forest land, timberland, or timberland production (City of Santa Cruz 2019). Therefore, no forestland would be converted to non-forest use as a result of the proposed project. The small two parcels of prime farmland and grazing land near the proposed project, described in a) above, would not be impacted by construction activities. Additionally, the proposed project would not result in other changes in the existing environment which, due to their location or nature, could convert farmland to non-agricultural use or convert forest land to non-forest use. Therefore, the proposed project would result in no impacts on farmland or forest land.

References

City of Santa Cruz. 2012. City of Santa Cruz 2030 General Plan. Internet web site: http://www.cityofsantacruz.com/home/showdocument?id=33418. June 2012. Accessed April 2, 2019.

City of Santa Cruz. 2019. City of Santa Cruz Zoning Districts Map. Internet web site: https://www.cityofsantacruz.com/home/showdocument?id=8090. Accessed March 29, 2019.

[DOC] California Department of Conservation. 2015. Santa Cruz County Williamson Act FY 2015–2016. Internet web site: fftp://ftp.consrv.ca.gov/pub/dlrp/wa/SantaCruz_15_16_WA.pdf. Accessed April 2, 2019.

[DOC] California Department of Conservation. 2016. California Important Farmland Finder. Internet web site: https://maps.conservation.ca.gov/DLRP/CIFF. Accessed April 2, 2019.

Air Quality

Environmental Issue Area:	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the project:				
a) Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	☐	☒
b) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard?	☐	☐	☒	☐
c) Expose sensitive receptors to substantial pollutant concentrations?	☐	☐	☒	☐
d) Result in other emissions (such as those leading to odors adversely affecting a substantial number of people?	☐	☐	☒	☐

Environmental Setting and Impact Analysis

a) **No Impact.** Santa Cruz County is located in the North Central Coast Air Basin and is governed by the Monterey Bay Air Resources District (MBARD) (formerly known as the Monterey Bay Unified Air Pollution Control District). Construction impacts on air quality would be short-term and temporary. The proposed project would not obstruct or conflict with the MBARD Air Quality Management Plan in the long term; in addition, the project's construction activities would not exceed the screening level listed in Section 5.3 of the MBARD CEQA Guidelines for construction sites with earth-moving activities (MBUAPCD 2008). Therefore, with the obtainment of an MBARD permit, if needed, for engines greater than 50 hp, as described in the Equipment section of the Project Description, the proposed project would not conflict with or obstruct implementation of any air quality plans and, therefore, would have no impact.

b) **Less-than-Significant Impact.** Santa Cruz County is classified as nonattainment for ozone and inhalable particulates (PM_{10}) according to state standards (County of Santa Cruz 2019). Construction impacts on ozone and inhalable particulates would be short-term and temporary. The ambient concentration of ozone is not to exceed 0.09 parts per million averaged over a 1-hour period and 0.070 parts per million averaged over an 8-hour period. The ambient concentration of PM_{10} is not to exceed 50 micrograms per cubic meter averaged over a 24-hour period and 30 micrograms per cubic meter measured as an annual average (MBUAPCD 2008). Because the construction activities associated with the proposed project would not disturb more than 2.2 acres per day, the proposed project would not exceed the screening level listed in Section 5.3 of the MBARD CEQA Guidelines for construction sites with earth-moving activities (MBUAPCD 2008). Minor maintenance (such as cleaning or repairs, as needed) and operation of the proposed project would not generate any long-term air quality emissions. Therefore, the impact of the proposed project to the pollutants classified as nonattainment would be less–than-significant.

c) **Less-than-Significant Impact.** The proposed project area is located in a predominantly industrial area (City of Santa Cruz 2019); however, there are homes located adjacent to eastern and western pits. Construction could increase the amount of dust in the air; however, BMPs, such as watering for dust control, would be implemented in order to reduce these pollutants to the extent practicable. No hospitals or schools are located within one-quarter mile of the proposed project area. Additionally, with the use of proposed construction methods, as described in the Site Preparation, Microtunneling, and Site Restoration sections of the Project Description, the

closest residential receptors, located approximately 100 feet from the proposed western pit, would not be exposed to substantial pollutant concentrations. Therefore, with the implementation of dust control, MBARD Rule 424, and the use of alternative fuels as described in the Site Preparation section of the Project Description, the impacts associated with increased pollutants to sensitive receptors would be less than significant.

d) **Less-than-Significant Impact.** See the response to c) above. Construction of the proposed project could result in a temporary emission of odors (e.g., diesel exhaust) from construction equipment and vehicles. The Water Department anticipates that these odors would be short-term, limited in extent at any given time, and distributed throughout the project study area during the duration of construction, and therefore, would not affect a substantial number of individuals. Residences are limited to 10 that are located approximately 100 feet northeast and northwest of the proposed project area; therefore, a substantial number of people would not be impacted during construction. Therefore, impacts as a result of other emissions would be less than significant.

References

City of Santa Cruz. 2019. City of Santa Cruz Zoning Districts Map. Internet web site: https://www.cityofsantacruz.com/home/showdocument?id=8090. Accessed March 29, 2019.

County of Santa Cruz. 2019. Air Quality. Internet web site: http://www.sccoplanning.com/PlanningHome/Environmental/AirQuality.aspx. Accessed April 3, 2019.

[MBARD] Monterey Bay Air Resources Board. 2017. 2012–2015 Air Quality Management Plan. Internet web site: http://www.co.monterey.ca.us/home/showdocument?id=62318. March 2017. Accessed June 21, 2019.

[MBUAPCD] Monterey Bay Unified Air Pollution Control District. 2008. CEQA Air Quality Guidelines. Internet web site: https://www.mbard.org/files/f665829d1/CEQA_full+%281%29.pdf. October 1995. Updated February 2008. Accessed April 11, 2019.

Biological Resources

Environmental Issue Area:	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the project:				
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	☐	☒	☐	☐
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	☐	☒	☐	☐
c) Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	☐	☐	☒	☐
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of wildlife nursery sites?	☐	☐	☐	☒
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☐	☐	☒
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	☐	☐	☐	☒

Environmental Setting and Impact Analysis

a) **Potentially Significant Unless Mitigation Incorporated.** The following sources were used to characterize the environmental setting in the proposed project area and secondary staging area. Project-related documentation was reviewed for site-specific data regarding habitat suitability for special-status species. In addition, a biological site visit was completed on December 26, 2018, by qualified biologists to delineate jurisdictional boundaries, map vegetation communities, and conduct a habitat assessment. Habitats in the project area include developed, open water, riparian, and ruderal areas (Figure 3). Lastly, preliminary database searches were performed using the following sources to identify special-status species and their habitats, as well as aquatic resources, with the potential to occur in the proposed project area:

- U.S. Fish and Wildlife Service's (USFWS) Information for Planning and Consultation System (IPaC) (USFWS 2019a)
- USFWS Critical Habitat Portal (USFWS 2019b)
- CDFW California Natural Diversity Database (CNDDB) QuickView Tool in BIOS 5 (CDFW 2019)
- California Native Plant Society (CNPS) Inventory of Rare, Threatened, and Endangered Plants of California (CNPS 2019)
- National Oceanic and Atmospheric Administration, National Marine Fisheries Society (NMFS), West Coast Region, California Species List Tool (NMFS 2019)
- Google Earth aerial imagery (Google Earth 2019)

A query of the CNDDB database, USFWS IPaC system, USFWS Critical Habitat Portal, CNPS database, and NMFS California Species Tool provided a list of known occurrences for special-status species in the Santa Cruz, California, U.S. Geological Survey 7.5-minute quadrangle and all adjacent quads, including Ano Nuevo, Davenport, Felton, Laurel, and Soquel. In addition, the CNPS database was queried to identify special-status plant species with the potential to occur in the aforementioned U.S. Geological Survey quadrangles. Raw data from the database queries are provided in Appendix A.

The results of the USFWS, CDFW, NMFS, and CNPS database queries identified several special-status species with the potential to be impacted by project-related activities. Appendix A provides a summary of all special-status species identified in the database results, as well as a description of the habitat requirements for each species and conclusions regarding the potential for each species to be impacted by project components. In cases where a determination was made that no suitable habitat for a given species is present in the proposed project area (Appendix A), that species is not analyzed further in this document. The species or species groups identified below were determined to have the potential to be significantly impacted by project-related activities, either directly or indirectly, as a result of the proposed project. Mitigation measures have been developed and included in the species-specific discussions below when it is possible to reduce impacts on the identified species to a less-than-significant level.

Figure 3. Biological Resources

Special-status Fish

Several fish species are known to occur or have the potential to occur in the San Lorenzo River, including coho salmon (*Oncorhynchus kisutch*) and steelhead (*Oncorhynchus mykiss irideus*). The San Lorenzo River is also designated as critical habitat for steelhead and as essential fish habitat for West Coast salmon and coho salmon.

Although these species might be found in the open-water habitats of the San Lorenzo River, no in-water work is proposed and the river and associated riparian corridor would be avoided. However, if cracks or fissures exist in the substrate below the San Lorenzo River, there is a possibility that drilling mud could move through the cracks and exit at the surface and into the flowing stream. This is known as an inadvertent drilling fluid release, or "frac-out." A frac-out event could temporarily harm species. As described in the Microtunneling section of the Project Description, detailed planning and management measures, as well as corrective actions to be taken in the event of a release of drilling fluid, would be included in an Inadvertent Release Contingency Plan, to be submitted to CDFW at least 606 days before microtunneling begins. This plan is required and is intended to avoid adverse effects on special-status fish and other aquatic species from a project-induced accidental release of fuel, fuel oil, hydraulic fluid, or drilling mud.

Before starting work, the limits of construction would be fully fenced using a combination of silt fence, orange construction fence, or other exclusionary measures, based on site-specific locations, in order to exclude wildlife from entering the work area, prevent sediment from entering nearby aquatic resources, and confine construction activity to the defined work space (see the Site Preparation section of the Project Description). The fences would also keep project work isolated from the San Lorenzo River and would establish barriers between aquatic habitats and project activities, thereby minimizing project-related runoff and erosion. The fences would be inspected daily, and any holes or damage would be patched immediately.

Finally, as part of the proposed project (see the Site Restoration section of the Project Description), the contractor would be required to return any exposed and/or disturbed areas resulting from construction activities to their original contour and grade, and vegetated areas would be restored using locally native grass and forb seeds. Areas would be seeded with species appropriate to their topographical and hydrological character. Seeded areas would be covered with broadcast straw and/or jute-netted.

Because of ground disturbance–related project activities and because species could occur adjacent to the construction zone, the proposed project could significantly impact special-status fish, even with the environmental commitments discussed above. To reduce the potential for significant impacts on special-status fish species to a less-than-significant level, implementation of mitigation measure MM-BIO-1 would also be required to educate workers on proximity to sensitive species and species avoidance requirements.

- **MM-BIO-1: Biological Monitor and Worker Environmental Awareness Training.** A qualified biologist(s) would monitor construction activities that could potentially affect sensitive biological resources. The amount and duration of monitoring would depend on the project specifics and would be determined by the qualified biologist. In addition, a qualified biologist would conduct mandatory contractor/worker awareness training for construction personnel. The awareness training would be provided to all construction personnel before the project starts to brief them on the locations of sensitive biological resources, how to identify special-status species, the need to avoid impacts on biological resources (e.g., plants, wildlife, and aquatic resources), and the reporting requirements and any penalties for not complying with biological mitigation requirements. If new construction personnel are added to the project, the contractor would require them to receive the mandatory training before starting work.

With the implementation of MM-BIO-1, an Inadvertent Release Contingency Plan, and exclusionary fences, as well as post-construction site restoration, impacts on special-status fish would be less than significant with mitigation incorporated.

Special-status Reptiles and Amphibians

The San Lorenzo River and associated riparian vegetation contain suitable habitat for up to four special-status reptiles and amphibians: western pond turtle (*Emys marmorata*), California giant salamander (*Dicamptodon ensatus*), Santa Cruz black salamander (*Aneides flavipunctatus niger*), and coast range newt (*Taricha torosa*). The proposed project has been designed to fully avoid the San Lorenzo River and all riparian vegetation. No

riparian vegetation removal is anticipated; however, the proposed project could disturb these species during construction if they are present.

Construction BMPs would include establishing limits of the construction zone. The construction zone would be fully fenced using a combination of silt fence, orange construction fence, and other exclusionary measures (as appropriate) to establish a barrier between riparian habitats and project activities, thereby avoiding and minimizing potential for ingress by wildlife. All BMPs would be maintained until construction activities are completed and all up-slope soils are stabilized. In addition, the potential for post-project erosion and sedimentation of adjacent habitats would be reduced by the revegetation of disturbed areas once construction activities are complete.

Although the proposed project is designed to fully avoid aquatic resources and riparian habitats, project activities including site preparation, open trenching, and microtunneling require use of equipment that has the potential to release fuel, oil, lubricants, or non-toxic drilling muds into the aquatic environment. Accidental releases could expose aquatic special-status species to oil or hazardous materials, resulting in direct impacts or indirect impacts through destruction or degradation of habitat, food sources, or nursery grounds. The Inadvertent Release Contingency Plan would minimize adverse effects on special-status reptiles and amphibians from a potential project-induced accidental release of fuel, fuel oil, hydraulic fluid, or drilling mud.

Because of ground disturbance–related project activities and because species could occur within or adjacent to the construction zone, the proposed project could significantly impact special-status reptiles and amphibians. To reduce potential significant impacts on special-status reptiles and amphibians to a less-than-significant level, the inclusion of an Inadvertent Release Contingency Plan, exclusionary fencing, and site restoration, as described in the Site Preparation, Microtunneling, and Site Restoration sections of the Project Description, would be required. In addition, MM-BIO-1 described in the previous section and MM-BIO-2 and MM-BIO-3 would be implemented.

- **MM-BIO-2: Preconstruction Clearance Surveys.** A qualified biologist would conduct preconstruction clearance surveys for special-status species, including western pond turtle, Santa Cruz black salamander, California giant salamander, coast range newt, and San Francisco dusky-footed woodrat, and for special-status bats prior to the start of construction activities on or before the first scheduled day of work. If individuals are found within or directly adjacent to the project area, the area would be left unaffected until the individual(s) have left the area or a relocation decision has been made in consultation with CDFW. If woodrat nests or bat roosts are found within or directly adjacent to the project area, appropriate no-disturbance buffers would be implemented to minimize impacts on woodrats or roosting bats during construction of the project. The size of no-disturbance buffers would be determined by a qualified biologist based on the species, activities proposed in the vicinity of the nest or roost, and topographic and other visual barriers.
- **MM-BIO-3: Wildlife Entrapment Avoidance.** If a trench or pit measuring 1 foot or greater in depth must be left open at the end of a day's construction activities, the open areas would be either covered or fenced, or the end of any open walls would be ramped at an approximate 2:1 slope to allow any wildlife that enters the excavation to escape. A qualified biologist may approve the use of an alternative method to prevent ingress or entrapment.

Implementation of MM-BIO-1, MM-BIO-2, and MM-BIO-3 would minimize potential impacts on western pond turtle, California giant salamander, Santa Cruz black salamander, and coast range newt. The worker environmental awareness training would educate workers about biological resources and proper avoidance. Also, adverse effects to individuals would be minimized by conducting preconstruction surveys (MM-BIO-2) and implementing full avoidance (MM-BIO-3), if special-status reptiles and/or amphibians are found. For these reasons, impacts on special-status reptiles and amphibians would be less than significant.

Special-status Birds, Migratory Birds, and Raptors

The proposed project area might provide nesting, wintering, and/or foraging habitat for several special-status bird and raptor species including tricolored blackbird (*Agelaius tricolor*), olive-sided flycatcher (*Contopus cooperi*), white-tailed kite (*Elanus leucurus*), loggerhead shrike (*Lanius ludovicianus*), and purple martin (*Progne subis*). The proposed project area also provides nesting, wintering, and/or foraging habitat for other migratory birds and raptors not identified in the attached Biological Resources Queries. All native breeding birds (except game birds

during the hunting season), regardless of their listing status, are protected under California Fish and Game Code 3503 and the Migratory Bird Treaty Act.

Ground disturbance, as well as vegetation and tree clearing during the nesting season could result in direct impacts on nesting birds should they be present in disturbance areas. Furthermore, there is a potential for disturbing nesting birds from noise, dust, and other construction-related activities. Any direct or indirect effects on migratory and special-status bird species, or their nests, would be a significant impact. Potential impacts on special-status birds, migratory birds, and raptors would be reduced by installation of exclusionary fencing to confine construction activity to the work area and would avoid unnecessary encroachment into areas that might be used for nesting by special-status birds, migratory birds, or other raptors. The Biologist will demarcate exclusion zones for nests discovered during nesting season (February 1 – August 31). However, to further reduce the potential for impacts on special-status birds, migratory birds, and raptors, implementation of MM-BIO-1, MM-BIO-4 and MM-BIO-5 would also be required.

- **MM-BIO-4: Migratory Bird, Special-status Bird, and Raptor Surveys.** If feasible, tree and vegetation clearing would be conducted outside the migratory bird (February 1 to August 31) nesting season. However, if clearing and/**or** construction activities will occur during the nesting season, then preconstruction surveys for special-status birds and other migratory bird and/or raptor species would take place no more than 7 days prior to the beginning of construction within 250 feet of suitable nesting habitat, if feasible. If the preconstruction surveys do not identify any nests within areas potentially affected by construction activities, no further mitigation would be required. If the preconstruction surveys do identify nesting bird species within areas that could be affected by site construction, MM-BIO-5 would be implemented.
- **MM-BIO-5: Nesting Bird Avoidance.** If active nest sites are identified within the survey areas, to avoid construction or access-related disturbances to migratory bird nesting activities, a no-disturbance buffer would be established for all active nest sites before any project construction activities begin. The size of no-disturbance buffers would be determined by a qualified biologist based on the species, activities proposed in the vicinity of the nest, and topographic and other visual barriers.

The worker environmental awareness training would provide that all workers are instructed about proper avoidance techniques for nesting birds (MM-BIO-1). In addition, adverse effects on individuals would be minimized by conducting preconstruction surveys (MM-BIO-4) and fully avoiding nests (MM-BIO-5), if special-status birds are found. For these reasons, impacts on special-status birds would be less than significant.

San Francisco Dusky-footed Woodrat

The San Francisco dusky-footed woodrat (*Neotoma fuscipes annectens*) might use the riparian corridor associated with the San Lorenzo River. Although no vegetation removal or disruption of riparian habitat is anticipated, there is still a potential to disturb to San Francisco woodrats from noise, dust, and other construction-related activities.

Exclusionary fences would confine construction activity to the work area and would avoid unnecessary encroachment into areas that might be used for by woodrats. Potential impacts on San Francisco dusky-footed woodrat would be less than significant through the implementation of exclusionary fencing, as described in the Site Preparation section of the Project Description, and MM-BIO-1, MM-BIO-2, and MM-BIO-3. Worker environmental awareness training would provide that all workers are instructed about proper avoidance techniques for woodrats (MM-BIO-1). In addition, adverse effects would be minimized by conducting preconstruction surveys and fully avoiding woodrat nests, if found (MM-BIO-2), and by controlling species access at open pits or trenches (MM-BIO-3). For these reasons, impacts on San Francisco woodrats would be less than significant.

Special-status Bats

Townsend's big-eared bat (*Corynorhinus townsendii)*, pallid bat (*Antrozus pallidus)*, and western red bat (*Lasiurus blossevillii*) are all California species of special concern. These species might use a variety of habitats and structures throughout the proposed project area, as well as in adjoining off-site areas, for roosting and foraging. Townsend's big-eared bats typically roost in caves, mines, or buildings. Pallid bats and western red

bats might be found roosting in rock crevices, structures, or hollow trees. Special-status bats might roost in trees or structures in the proposed project area, such as the Coast Pump Station or Tait Well building. In addition, the entire proposed project area provides suitable foraging habitat for these species. Construction of the proposed project would not require removal of habitat that could provide maternity roosting sites for these special-status bat species. However, construction and operation of the proposed project could also result in noise, dust, and other indirect disturbances to special-status bats in the proposed project area.

Installing exclusionary fencing fences would confine construction activity to the work area and would avoid unnecessary encroachment into areas that might be used as roosting sites for special-status bats. Potential impacts on special-status bats would be less than significant through the implementation of exclusionary fencing, as described in the Site Preparation section of the Project Description, MM-BIO-1, MM-BIO-2, and MM-BIO-1. Worker environmental awareness training would provide that all workers are instructed about proper avoidance techniques for bats (MM-BIO-1). In addition, adverse effects would be minimized by conducting preconstruction surveys and fully avoiding bat roosts, if found (MM-BIO-2), and by controlling species access at open pits or trenches (MM-BIO-1). For these reasons, impacts on special-status bats would be less than significant.

Special-status Plants

The ruderal vegetated portions of the main proposed project area are highly disturbed and subject to ongoing management by the City, including twice-annual weed abatement by string trimmer, which likely precludes the presence of special-status plants. Other portions of the project area are developed or would be avoided. For this reason, the proposed project would have a less-than-significant effect on special-status plants. For all species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by CDFG, CDFW or USFWS, and as discussed separately above, the proposed project would have a less-than-significant effect, either directly or through habitat modifications, on special-status plants.

b) **Potentially Significant Unless Mitigation Incorporated.** Sensitive habitats include (1) areas of special concern to resource agencies; (2) areas protected under CEQA; (3) areas designated as sensitive natural communities by CDFW; (4) areas listed in California Fish and Game Code Section 1600; (5) areas regulated under Section 404 of the Clean Water Act; and (6) areas protected under local regulations and policies. The proposed project area contains riparian habitats and aquatic resources that are sensitive natural communities. The extent of riparian cover, as defined by local (City) policies, is depicted in Figure 3 and are considered sensitive The remaining communities, such as the ruderal and developed areas, are not considered sensitive.

All aquatic resources in the proposed project area are sensitive natural communities. The proposed project has been designed to avoid impacts on these resources; however, an accidental frac-out could negatively impact these sensitive natural communities. Potential impacts on sensitive communities from frac-out would be less than significant due to the temporary nature and low likelihood of occurrence with controls in place. Additionally, the implementation of MM-BIO-1, an Inadvertent Release Contingency Plan, exclusionary fencing, and site restoration, as described in the Site Preparation, Microtunneling, and Site Restoration sections of the Project Description, would minimize project-related runoff and erosion, establish barriers between riparian or sensitive communities and project activities, educate workers, and restore disturbed habitat to further minimize the potential for impacts.

Impacts on and removal of riparian trees, will be avoided as possible; however, tree removal may be necessary. Should impacts to riparian trees occur, they would be considered significant. In order to minimize potentially significant impacts on trees, should they occur, to a less than significant level, implementation of mitigation measures MM-BIO-6 through MM-BIO-8 would be required.

- **MM-BIO-6: No Net Loss of Riparian Canopy.** No net loss of riparian canopy will be achieved through impact avoidance, minimization, and/or compensatory mitigation. Mitigation for any permanent impacts on riparian canopy shall be provided at a minimum 1:1 ratio. Mitigation may include on-site or off-site restoration, in-lieu fee payment, or purchase of mitigation credits at a CDFW-approved mitigation bank. Mitigation as required in regulatory permits issued through CDFW may be applied to satisfy this measure.
- **MM-BIO-7: Tree Avoidance.** Existing riparian vegetation, oaks, and other native tree species shall be retained to the extent feasible. A Tree Protection Zone (TPZ) shall be established around any tree or group of trees to be avoided. The TPZ shall be delineated by an ISA Certified Arborist. The TPZ shall

be defined by the radius of the dripline of the tree(s) plus one foot. The TPZ of any protected trees shall be demarcated using fencing that shall remain in place for the duration of construction activities.

No heavy equipment or machinery shall be operated within the TPZ unless under the supervision of an ISA Certified Arborist. Grading shall be prohibited within the TPZ. No construction materials, equipment, or heavy machinery shall be stored within the TPZ.

- **MM-BIO-8: Minimization of Root Damage.** If trenching or other ground disturbance must occur in the TPZ, it will be done with the approval and under the supervision of an ISA Certified Arborist. If roots need to be pruned, roots over two inches in diameter shall be pruned by hand with loppers, handsaw, reciprocating saw, or chain saw rather than left crushed or torn. When completed, exposed roots shall be kept moist with burlap or backfilled within one hour.

Implementation of the above measures would minimize impacts on sensitive communities, including riparian trees, to a less than significant level. MM-BIO-6 would provide there is no net loss of riparian canopy. In addition, MM-BIO-7 and MM-BIO-8 would minimize activity within drip lines, thereby reducing potential damage to onsite trees.

c) **Less-than-Significant Impact.** No jurisdictional delineation has been verified by the United States Army Corps of Engineers to date; however, the proposed project has been designed to completely avoid aquatic resources. Indirect effects on state and federally protected waters as a result of the proposed project could include sedimentation and pollution by frac-out. This is the only foreseen avenue of potential impacts on aquatic resources and would be less than significant due to the temporary nature and low likelihood of occurrence with controls in place. Additionally, the installation of MM-BIO-1, an Inadvertent Release Contingency Plan, exclusionary fencing, and site restoration, as described in the Site Preparation, Microtunneling, and Site Restoration sections of the Project Description, would minimize project-related runoff and erosion, establish barriers between aquatic resources and project activities, educate workers, and restore disturbed habitat to further minimize the potential for impacts erosion. Therefore, the proposed project would have a less-than-significant impact on aquatic resources.

d) **No Impact.** Wildlife corridors refer to established migration routes commonly used by resident and migratory species to pass from one location to another. Corridors are present in a variety of habitats and link otherwise fragmented acres of undisturbed area. Maintaining the continuity of established wildlife corridors is important to (1) sustain species with specific foraging requirements, (2) preserve a species' distribution potential, and (3) retain diversity among many wildlife populations. Therefore, resource agencies consider wildlife corridors to be a sensitive resource.

The above-ground components of the proposed project would be mostly limited to developed and disturbed areas on either bank of the San Lorenzo River and would not include other improvements that would change the permeability of the associated riparian corridors. The corridor of the San Lorenzo River would be fully avoided, thus causing no impact. Additionally, avoidance and minimization measures would be implemented to limit disturbances to migratory wildlife during construction. The proposed project would have no impact on fish or wildlife movement or migration corridors or nursery sites.

e) **No Impact.** The proposed project area is located within the city of Santa Cruz and would be subject to local policies and ordinances including those in the City of Santa Cruz General Plan and the City of Santa Cruz Municipal Code. The City of Santa Cruz General Plan includes policies to protect and minimize impacts on native and sensitive species and habitats and to protect trees, wetland and riparian areas, and wildlife movement corridors (City of Santa Cruz 2012). The proposed project would not conflict with policies outlined in the General Plan.

Other plans include the City-wide Creeks and Wetlands Management Plan and San Lorenzo Urban River Plan, both of which establish buffers around waterways and associated riparian corridors. Although a portion of the project area on both sides of the river overlaps with the riparian zone and associated buffer defined in these plans, the proposed project is considered exempt from these policies per California Government Code 53090, building and zoning ordinances "shall not apply to the location or construction of facilities for the production, generation, storage, treatment, or transmission of water or for the generation of electrical energy."

The City of Santa Cruz Code Chapter 9.56, Preservation of Heritage Trees and Shrubs, and Chapter 13.30, Street Trees, are intended to preserve and protect heritage trees and trees in the public right-of-way. Under

these ordinances, any tree within the public right-of-way or on any tree with a 14 inch diameter measured at 54 inches from grade would be subject to protection. Protected (aka heritage) trees will be avoided as possible; however, if it is determined that any of these trees need to be removed or have branches or roots pruned, it would require a permit. In addition, the proposed project would be comply with the City of Santa Cruz Water Department's Tree Trimming, Landscape Maintenance and Major Vegetation Removal Policy No. 91-6 which requires approval by the Water Director or Deputy Director for removal of any tree with a diameter greater than 14 inches. The proposed project would be required to comply with local tree ordinances, including the acquisition of a tree permit, if needed, and no conflict is anticipated. In addition, implementation of MM-BIO-7 and MM-BIO-8 would minimize damage to onsite trees. There would be no conflict with any local policies or ordinances protecting biological resources, and no avoidance measures are required. Therefore, the proposed project would have no impact on local policies or ordinances protecting biological resources.

f) **No Impact.** There would be no conflict with provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan. Therefore, the proposed project would have no impact on local, state, or regional conservation plans.

References

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[USFWS] United States Fish and Wildlife Service. 2019a. Information for Planning and Consultation System (online edition). Internet web site: https://ecos.fws.gov/ipac/. Accessed June 21, 2019.

[USFWS] United States Fish and Wildlife Service. 2019b. Critical Habitat Portal. Internet web site: https://fws.maps.arcgis.com/home/webmap/viewer.html. Accessed June 21, 2019.

Cultural Resources

Environmental Issue Area:	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the project:				
a) Cause a substantial adverse change in the significance of a historical resource pursuant to §15064.5?	☐	☒	☐	☐
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	☐	☒	☐	☐
c) Disturb any human remains, including those interred outside of dedicated cemeteries?	☐	☒	☐	☐

Environmental Setting and Impact Analysis

a) **Potentially Significant Unless Mitigation Incorporated.** Archaeological resources were identified in accordance with the provisions of California Public Resources Code Section 5097.9, Health and Safety Code 7050.5, and Section 24.12.430 of the Santa Cruz Municipal Code. A historic records search with the Northwest Information Center at Sonoma State University was completed for the proposed project in February 2019 (Appendix B). The results identified seven previously conducted cultural resources investigations (all archaeological field studies) within the proposed project footprint. These investigations were all were completed between 1988 and 2010. One previously recorded built-environment resource is within the project footprint (P-44-0401, Highway 9). Based on a review of historical maps and aerial photographs, two other potential historical resources are also within the project footprint: a check dam and a gauging station, neither of which would be affected by the proposed project activities because work would not occur in the active channel of the San Lorenzo River (City of Santa Cruz and HDR Engineering 2019).

The records search results indicate a low sensitivity for surficial near-surface cultural resources in the study area where previous investigations have occurred. However, pre-contact Native American habitation was typically located along historical waterways, as shown by the prehistoric occupation site (P-44-0110) previously recorded in the records search study area, approximately 0.25 mile west of the project area (City of Santa Cruz and HDR Engineering 2019), as well as the downstream ethnographic villages of *Chalu mu* and *Aulin-tak* (Kroeber 1976, Figure 42). The proposed project site on the west side of the San Lorenzo River is in a commercial sand-and-graveled storage lot that has been heavily modified and disturbed. Although it is undeveloped, the proposed project site on the east side of the river appears to have been graded and levelled and is partially covered in dense, thick surface vegetation, which obscured ground observations. Accordingly, there is the possibility of discovering undocumented buried resources or human remains. The inadvertent discovery of cultural materials or human remains during project-related ground-disturbing activities could result in significant impacts if not properly managed. Implementation of MM-CUL-1, MM-CUL-2, and MM-CUL-3 are proposed to reduce potential impacts to a less-than-significant level.

MM-CUL-1: Personnel Training and Development of Monitoring Program by Archaeologist. An archaeologist meeting the Secretary of the Interior's Professional Qualification Standards shall be retained to oversee and carry out the archaeological mitigation measures as appropriate. The archaeologist shall conduct a pre-excavation meeting with construction personnel who would be briefed regarding the proper procedures if buried cultural materials are encountered. The archaeologist shall also develop an appropriate monitoring program and schedule and select a qualified archaeological monitor to be approved by the Water Department.

MM-CUL-2: Archaeological and Tribal Monitoring. A qualified archaeological monitor, as assigned and directed by the project archaeologist and approved by the Water Department, shall monitor excavation activities on the project site within Holocene-epoch (11,700 years before present) sediments that have not been previously disturbed. These sediments are likely to be encountered during excavations for the microtunneling pits on either side of the river and the open trenching for the waterline connectors. Pre-Holocene sediment, disturbed sediments, and microtunneling slurry spoils do not need to be monitored. Per the request of the Amah Mutsun Tribal Band, a qualified Native American monitor may also be onsite for the same duration as the archaeological monitor.

If archaeological or cultural resources are unearthed during ground-disturbing activities, the archaeological monitor, in coordination with the Native American monitor if present, shall halt or redirect such activities away from the area of the find to allow evaluation and immediately notify the Water Department. Work may continue outside the vicinity of the find, at a sufficient distance to be determined by the archaeological monitor and Native America monitor as necessary to provide compliance with these mitigation measures and the archaeological monitoring program. Deposits shall be treated in accordance with applicable federal, state, and local guidelines, including those set forth in California Public Resources Code Section 21083.2. In addition, if it is determined that an archaeological site is a historic resource, the provisions of Public Resources Code Section 21084.1, CEQA Guidelines Section 15064.5, and Santa Cruz Municipal Code Section 24.12.430.9 shall be implemented.

The archaeologist shall evaluate the discovered resource(s) and, if they are significant, notify the Water Department of Santa Cruz Water Department and then develop an appropriate treatment plan. Treatment plans shall consider preservation of the resource(s) in place as a preferred option. The archaeologist, in coordination with any participating Native American tribes, shall then prepare a report to be reviewed and approved by the Water Department. The report shall describe any resource(s) unearthed, the treatment of such resource(s), and the evaluation of the resource(s) with respect to the California Register of Historic Resources. If the resource(s) are found to be significant, a separate report detailing the results of the recovery and evaluation process shall be prepared. The Water Department shall designate one or more appropriate repositories for any cultural resources that are uncovered.

By implementing MM-CUL-1 and MM-CUL-2, impacts on historical resources would be less than significant.

b) **Potentially Significant Unless Mitigation Incorporated.** As discussed above, an unanticipated discovery of archaeological resources during project-related ground-disturbing activities could result in significant impacts if not properly managed. Implementation of Mitigation Measure CUL-1 and CUL-2 are proposed to reduce potential impacts to a less-than-significant level.

c) **Potentially Significant Unless Mitigation Incorporated.** See the response to a) above. Although the northern portion of the property could be used for supplemental staging, no burial sites are located in this area, and no ground-disturbing activity would occur in this area. There is no available evidence for the presence of human remains on the project site; however, inadvertent discovery of human remains could result in significant impacts if not properly managed. MM-CUL-3 will be implemented to minimize impacts from the potential discovery of human remains during construction.

MM-CUL-3: Human Remains. If human remains are discovered during ground-disturbing activities or project construction, work shall be halted within at least 150 feet of the discovery location, and at a greater distance if determined necessary by the archaeologist meeting the Secretary of the Interior's Professional Qualification Standards, and within any nearby area reasonably suspected to overlie human remains (Public Resources Code Section 7050.5 and Santa Cruz Municipal Code Section 24.12.430.6). The Santa Cruz County Coroner shall be notified immediately to determine whether the cause of death must be investigated. If the coroner determines that the remains are of Native American origin, it is necessary to comply with state laws regarding the disposition of Native American burials, which fall within the jurisdiction of the California NAHC (Public Resources Code Section 5097). In this case, the coroner will contact NAHC. The descendants or MLD of the deceased will be contacted, and work will not resume until the MLD have made a recommendation to the Water Department regarding the appropriate means of treatment and disposition, with appropriate dignity, of the human remains and any associated grave goods, as provided in Public Resources Code Section 5097.98.

By implementing MM-CUL-3, impacts related to disturbance of human remains, if found during construction, would be less than significant.

References

City of Santa Cruz and HDR Engineering, Inc. 2019. Cultural Resources: Summary of Record Search Results. February 12, 2019.

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Energy

Environmental Issue Area:	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the project:				
a) Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?	☐	☐	☐	☒
b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?	☐	☐	☐	☒

Environmental Setting and Impact Analysis

a) **No Impact.** In its 2030 General Plan, the City describes policies for conserving natural resources and energy resources. These goals include reducing community-wide greenhouse gas emissions by 30% by 2020, requiring that all new development be carbon-neutral by 2030, promoting energy-efficient transportation, and promoting energy-efficient provision and use of water (City of Santa Cruz 2012).

Construction and maintenance activities associated with the proposed project would result in short-term increases in energy consumption. Specifically, the construction activities would require the use of gasoline, diesel fuel, other fuels, and electricity. Energy use during construction typically involves the use of motor vehicles, both for transportation of workers and equipment but also for construction equipment such as cranes, loaders, and dozers. Additional energy use would occur as power for tools and equipment used on site, including but not limited to the microboring machine, gas generators, air compressors, air handlers and filters, and other typical direct construction energy uses.

The proposed project would use generators and would not rely on electric power from local energy sources. Gas and diesel fuel is available in the community through a network of existing private distributors. Because of the high cost of fuel, construction and maintenance activities would not result in wasteful, inefficient, or unnecessary use of energy, since construction contractors would purchase fuel from local suppliers and would conserve the use of their supplies to minimize the cost of constructing the proposed project. Operation of the proposed project would have no impact on energy usage in the long term. Therefore, the proposed project would have a less-than-significant impact on consumption of energy resources.

b) **No Impact.** Other than the generated electricity and fuel consumption associated with short-term construction and related maintenance activities, the proposed project would not consume electricity or natural gas or generate vehicle trips in the short or long terms. Therefore, the proposed project would have a negligible effect on local energy consumption and would not conflict with or obstruct any state or local plan for renewable energy or energy efficiency. For this reason, there would be no impact on state or local energy plans.

References

City of Santa Cruz. 2012. City of Santa Cruz 2030 General Plan. Internet web site: http://www.cityofsantacruz.com/home/showdocument?id=33418. June 2012. Accessed April 2, 2019.

Geology and Soils

Environmental Issue Area:	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the project:				
a) Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury or death involving:				
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42?	☐	☐	☐	☒
ii) Strong seismic ground shaking?	☐	☐	☐	☒
iii) Seismic-related ground failure, including liquefaction?	☐	☐	☐	☒
iv) Landslides?	☐	☐	☐	☒
b) Result in substantial soil erosion or the loss of topsoil?	☐	☐	☒	☐
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse?	☐	☐	☐	☒
d) Be located on expansive soil, as defined in Table 18-1B of the Uniform Building Code (1994), creating substantial direct or indirect risk to life or property?	☐	☐	☐	☒
e) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?	☐	☐	☐	☒
f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☒	☐	☐

Environmental Setting and Impact Analysis

a)

i) **No Impact.** No historical faults (i.e., faults that have been active within the last 150 years) are located within 5 miles of the proposed project area. One Late Quaternary fault called the Ben Lomond fault is located roughly 1 mile from the proposed project area. This fault was last active between 150 and 130,000 years ago; however, the exact date of the latest activity is not known. The location of this fault is approximately located (i.e., inferred) based on local and regional geologic relations (USGS 2019a). In addition, the construction period would be short-term and temporary. Therefore, there would be no impact from faults or earthquakes on humans as a result of the proposed project.

ii) **No Impact.** The proposed project would not create any new structures or facilities for human use. Therefore, the proposed project would not increase the potential for loss, injury, or death as a result of strong seismic ground shaking.

iii) **No Impact.** The proposed project would not create any new structures or facilities for human use. Therefore, the proposed project would not increase the potential for loss, injury, or death as a result of ground fracture or liquefaction.

iv) **No Impact.** According to United States Geological Survey landslide hazard maps, the proposed project area is an area of flat ground (USGS 2019b). Therefore, the proposed project would not increase the potential for loss, injury, or death as a result of landslides.

b) **Less-than-Significant Impact.** The proposed project would disturb soil during construction. BMPs to reduce sedimentation and erosion on site would be defined in the construction SWPPP and implemented by the contractor to the extent practicable. Therefore, impacts from soil erosion would be less than significant.

c) **No Impact.** The proposed project area contains mostly Baywood loamy sand and Soquel loam soils (WSS 2017). The rest of the proposed project would take place under the San Lorenzo River. The City identifies cliff areas as areas of concern for unstable slopes. However, the proposed project area does not contain cliffs (City of Santa Cruz 2012). Therefore, the proposed project would have no potential to impact unstable soils.

d) **No Impact.** Expansive soils are not identified in the City of Santa Cruz General Plan as a potential concern (City of Santa Cruz 2012). Therefore, the proposed project would have no potential to impact expansive soils.

e) **No Impact.** The proposed project would not use any septic tanks. Any water encountered during pit excavation would be placed into a settling tank before being trucked to a nearby sewer main. Other wastewater would be managed by the contractor and transported off site. Therefore, the proposed project would not be required to support septic tanks and would have no impact.

f) **Potentially Significant Unless Mitigation Incorporated.** Based on records searches that were performed for the proposed project area, no unique paleontological or geologic features were identified (City of Santa Cruz and HDR Engineering 2019). Still, unique paleontological or geologic features could be discovered during subsurface work, which would be considered a significant impact. MM-GEO-1 will be implemented to minimize impacts from the potential discovery of buried paleontological resources during construction.

MM-GEO-1: Paleontological Resources. Before the start of construction activities, construction personnel involved with earth-moving activities would be informed of the proper notification procedures if fossils are encountered. If paleontological resources are encountered during earth-moving activities, the construction crew would immediately stop work, and a qualified paleontologist would evaluate the resource and prepare a proposed mitigation plan based on the situation.

Therefore, with MM-GEO-1, the proposed project would have no significant impact on unique paleontological or geologic features if found during construction activities.

References

City of Santa Cruz. 2012. City of Santa Cruz 2030 General Plan. Internet web site: http://www.cityofsantacruz.com/home/showdocument?id=33418. June 2012. Accessed April 2, 2019.

City of Santa Cruz and HDR Engineering. 2019. Cultural Resources: Summary of Record Search Results. February 12, 2019.

[USGS] United States Geological Survey. 2019a. U.S. Quaternary Faults. Internet web site: https://usgs.maps.arcgis.com/apps/webappviewer/index.html?id=5a6038b3a1684561a9b0aadf88412fcf. Accessed April 3, 2019.

[USGS] United States Geological Survey. 2019b. Landslides. Internet web site. https://earthquake.usgs.gov/learn/topics/geologicmaps/landslides.php. Accessed April 4, 2019.

[WSS] United States Department of Agriculture Web Soil Survey. 2017. Web Soil Survey. Internet web site: https://websoilsurvey.sc.egov.usda.gov/App/HomePage.htm. August 21, 2017. Accessed April 4, 2019.

Greenhouse Gas Emissions

Environmental Issue Area:	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the project:				
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	☐	☐	☒	☐
b) Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	☐	☐	☒	☐

Environmental Setting and Impact Analysis

a) **Less-than-Significant Impact.** Construction activities that could result in greenhouse gas emissions would be short-term and temporary in a footprint of less than 2 acres. Therefore, greenhouse gas emissions from implementing the proposed project would have minimal short-term impacts and would be consistent with the goals for energy efficiency in the City of Santa Cruz 2030 General Plan (City of Santa Cruz 2012). Additionally, long-term operation of the new pipeline segment would not change from the existing operation and would be limited to the underground transport of water. Therefore, implementing the proposed project would not generate greenhouse gas emissions, directly or indirectly, that could have a significant impact on the environment.

b) **Less-than-Significant Impact.** The City of Santa Cruz has a goal to reduce greenhouse gas emissions by 30% by 2020 (City of Santa Cruz 2012). Because of the limited timeline and scope of work of the proposed project, impacts resulting from the emission of greenhouse gas would be minimal. Therefore, impacts on plans, policies, and regulations on greenhouse gas emission reductions would be less than significant.

References

City of Santa Cruz. 2012. City of Santa Cruz 2030 General Plan. Internet web site: http://www.cityofsantacruz.com/home/showdocument?id=33418. June 2012. Accessed April 2, 2019.

Hazards and Hazardous Materials

Environmental Issue Area:	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the project:				
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☐	☒	☐
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the likely release of hazardous materials into the environment?	☐	☐	☒	☐
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☐	☒
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	☐	☐	☐	☒
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?	☐	☐	☐	☒
f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☐	☒
g) Expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires?	☐	☐	☐	☒

Environmental Setting and Impact Analysis

a) **Less-than-Significant Impact.** The proposed project would transport a limited amount of spoils from microtunneling off site for disposal. All uncontaminated spoils would be stockpiled and reused as backfill on sites during construction. Contaminated soils encountered during construction would be removed from the site and disposed of at a licensed facility. Microtunneling has the potential to cause “frac-out” in which drilling fluids could move through cracks and contaminate the surface and subsurface at the site during drilling. Monitoring microtunnel instrumentation, monitoring flow and discharge of drilling fluids and spoils, and other visual observations would be performed in order to minimize the potential for frac-out and subsequent impacts. As described in the Microtunneling section of the Project Description, an Inadvertent Release Contingency Plan

would be developed for the project and implemented in the event of frac-out. Additionally, an SWPPP would be prepared and approved as part of the construction NPDES permitting process and implemented on site to control the transport of soil off site and govern the use of potentially hazardous substances used during construction such as fuel, oil and grease, and hydraulic fluid. Therefore, there would be no impact from the proposed project on the routine transport, use, or disposal of hazardous materials.

b) **Less-than-Significant Impact.** The proposed project would not involve the storage or use of large amounts of hazardous materials on site. During construction, small amounts of fuel and grease would be used on site in designated areas with spill kits present to decrease the potential for a release of potentially hazardous materials to the surrounding environment. Therefore, the potential for creating a significant hazard to the public or environment due to an accidental release of hazardous materials to the environment would be less than significant.

c) **No Impact.** The closest school, The Neoteric Renaissance School of Art, is located over one-quarter mile from the proposed project site. Therefore, no impact on schools from hazardous emissions or materials would occur as a result of the proposed project.

d) **No Impact.** According to the EnviroStor database (EnviroStor 2019), three sites identified pursuant to Government Code Section 65962.5 are present within 1 mile of the proposed project site. One site, Bayside Oil II, Inc., is located 0.25 mile southwest of the proposed project site and is a permitted and operating facility. The second site, Salz Leathers, Inc., is located 0.25 mile south of the proposed project site and is a Tiered Permit cleanup site. The third site, also at Salz Leathers, Inc., is a voluntary cleanup site (EnviroStor 2019). None of these sites would be disturbed by proposed project construction. Therefore, no impact on hazardous sites would occur as a result of the proposed project.

e) **No Impact.** There are no airports within 2 miles of the proposed project area, and the area is not within an airport land use plan (Google Maps 2019). Therefore, the proposed project would have no impact on airports.

f) **No Impact.** The proposed project is located just within the edge of the City's emergency services area (City of Santa Cruz 2012). Construction activities are not anticipated to block roads or interfere with local emergency response because of the small number of construction vehicles that would travel on local roads that could be used during an emergency response or evacuation. See the Transportation section below for further details regarding roadway impacts. Therefore, the proposed project would not impact emergency response.

g) **No Impact.** The proposed project is located within a Local Responsibility Area classified as moderate and unclassified (CAL FIRE 2008) in a developed urban area alongside a river (City of Santa Cruz 2012). Therefore, the proposed project would not expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires.

References

CAL FIRE. 2008. Santa Cruz County Draft Fire Hazard Severity Zones in LRA [Local Responsibility Areas]. Internet web site: http://frap.fire.ca.gov/webdata/maps/santa_cruz/fhszl06_1_map.44.pdf. September 2007. Updated June 2008. Accessed April 5, 2019.

City of Santa Cruz. 2012. City of Santa Cruz 2030 General Plan. Internet web site: http://www.cityofsantacruz.com/home/showdocument?id=33418. June 2012. Accessed April 2, 2019.

EnviroStor. 2019. EnviroStor Database. Internet web site: https://www.envirostor.dtsc.ca.gov/public/map/?myaddress=santa+cruz%2C+ca. Accessed April 4, 2019.

Google Maps. 2019. Maps. Internet web site: http://www.google.com/maps. Accessed April 11, 2019.

Hydrology and Water Quality

Environmental Issue Area:	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the project:				
a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?	☐	☐	☒	☐
b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?	☐	☐	☐	☒
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:				
i) result in substantial erosion or siltation on- or off-site;	☐	☐	☐	☒
ii) substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite;	☐	☐	☐	☒
iii) create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or	☐	☐	☐	☒
iv) impede or redirect flood flows?	☐	☐	☐	☒
d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?	☐	☐	☒	☐
e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?	☐	☐	☐	☒

Environmental Setting and Impact Analysis

a) **Less-than-Significant Impact.** Microtunneling would occur at a depth of 60 feet, which could impact the groundwater table under and adjacent to the San Lorenzo River. The depth to groundwater in the proposed project area is as high as approximately 80 inches (6.7 feet) in some areas (WSS 2017). Therefore, the proposed project would require dewatering within the tunneling area as described in the Microtunneling section of the Project Description. However, water would be collected, settled, transported, and disposed of offsite by the contractor. Additionally, construction activities and storage of construction materials within the proposed project area could impact surface waters by the emission of hazardous materials. Installing exclusionary fences, as

described in the Site Preparation section of the Project Description, would minimize the risk of releasing pollutants from the site to surface water and groundwater. Additionally, with the implementation of microtunneling monitoring, described in the Microtunneling section of the Project Description, potential impacts from frac-out on water quality in the San Lorenzo River would be minimized by monitoring microtunnel instrumentation, monitoring flow and discharge of drilling fluids and spoils, and implementing other visual observation techniques. Detailed planning and management measures, as well as corrective actions to be taken in the event of a release of drilling fluid, would be included in an Inadvertent Release Contingency Plan. Because the new pipe would be underground and fully contained, there would be no risk of impact on groundwater during long-term operations. With the implementation of the SWPPP prepared for the Construction General Permit, the potential impacts to water quality are less than significant. Therefore, the impact of the proposed project on surface water and groundwater quality would be less than significant.

b) **No Impact.** Given that the proposed project is limited to replacing an existing segment of raw water pipeline, the proposed project would not require use of groundwater and would not interfere with existing groundwater recharge. The proposed project would not result in a net increase in the acreage of impermeable surfaces. Additionally, the old pipeline, which would be abandoned in place, would be capped in such a way that it would not impact the hydraulic conductivity of the area. Therefore, the proposed project would have no impact on groundwater supply.

c.i–c.iv) **No Impact.** The proposed project would not alter the existing drainage pattern of the site, including through altering the course of a river or stream or adding new impervious surfaces. New development on the site would be limited to underground pipes and an underground connection with an existing pump station. Site grading would be returned to its preconstruction condition; therefore, the proposed project would have no potential to impact erosion or siltation, increase the rate of surface runoff that could result in flooding or exceed the capacity of existing stormwater drainage systems, provide additional sources of polluted runoff, or impede or redirect flood flows as a result of altering the existing drainage pattern of the site.

d) **Less-than-Significant Impact.** The proposed project site is not located in tsunami or seiche zone. According to Federal Emergency Management Agency (FEMA) floodmaps, portions of the proposed project area include a regulatory floodway, 1% annual chance floodway, and 0.2% annual chance floodway (FEMA 2019). Additionally, a SWPPP would be designed and implemented in order to prevent the release of pollutants to waters in the event of site flooding. Therefore, the proposed project would have a less-than-significant potential, or 1% chance, for impact on the risk of a pollutant release if inundated in a flood hazard, tsunami, or seiche zone.

e) **No Impact.** The proposed project is governed by the Central Coast Basin Management Plan (California Water Board 2017) and the Sustainable Groundwater Management Act (Santa Cruz County 2014). Project construction would be implemented such that it would not conflict with these surface water and groundwater management plans. Water used during construction would be stored, transported off site, and disposed of via a sewer tie-in. Potential impacts on surface water and groundwater from frac-out, if it were to occur, would be managed by the Inadvertent Release Contingency Plan. Therefore, the proposed project would have no impact on a water quality control plan or sustainable groundwater management plan.

References

California Water Board. 2017. Water Quality Control Plan for the Central Coastal Basin. Internet web site: https://www.waterboards.ca.gov/centralcoast/publications_forms/publications/basin_plan/. March 2017. Accessed April 5, 2019.

[FEMA] Federal Emergency Management Agency. 2019. FEMA's National Flood Hazard Layer Viewer. Internet web site: https://hazards-fema.maps.arcgis.com/apps/webappviewer/index.html?id=8b0adb51996444d4879338b5529aa9cd&extent=-122.11406410644513,36.93995595016302,-121.94789589355472,37.008526592589654. Accessed April 5, 2019.

Santa Cruz County. 2014. The Sustainable Groundwater Management Act (SGMA) in Santa Cruz County. Internet web site: http://scceh.com/Home/Programs/WaterResources/GroundwaterManagement.aspx. Accessed April 5, 2019.

[WSS] United States Department of Agriculture Web Soil Survey. 2017. Web Soil Survey. Internet web site: https://websoilsurvey.sc.egov.usda.gov/App/HomePage.htm. August 21, 2017. Accessed April 4, 2019.

Land Use and Planning

Environmental Issue Area:	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the project:				
a) Physically divide an established community?	☐	☐	☐	☒
b) Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☐	☐	☒

Environmental Setting and Impact Analysis

a) **No Impact.** Because the proposed project would be limited to replacing an existing segment of underground raw water pipe, all long-term changes in the physical landscape would be underground. Additionally, construction impacts would have a small footprint of approximately 2 acres, primarily on City and publicly owned land. Therefore, the proposed project would have no potential to divide an established community, and therefore there would be no impact.

b) **No Impact.** Construction and operation of the proposed project would be consistent with policies in the City of Santa Cruz 2030 General Plan (City of Santa Cruz 2012). Therefore, the proposed project would not conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect, and there would be no impact.

References

City of Santa Cruz. 2012. City of Santa Cruz 2030 General Plan. Internet web site: http://www.cityofsantacruz.com/home/showdocument?id=33418. June 2012. Accessed April 2, 2019.

Mineral Resources

Environmental Issue Area:	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the project:				
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	☐	☐	☐	☒
b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan?	☐	☐	☐	☒

Environmental Setting and Impact Analysis

a) **No Impact.** The proposed project area is classified as MRZ-1 and MRZ-3(d). In MRZ-1 zones, geology indicates that no significant mineral deposits are present (NYU 2015). MRZ-3 zones are areas of undetermined mineral resource significance that are either known or inferred (DOC 2019). Microtunneling as part of the proposed project would cross through the MRZ-3(d) zone and would have the potential to encounter unknown mineral deposits in that zone, if they exist. However, there is no known mineral resource in this zone. Therefore, the proposed project would have no impact on a known mineral resource that would be of value to the region and the residents of the state.

b) **No Impact.** There are no mineral resource recovery sites listed for Santa Cruz County by the State of California (NYU 2015). Therefore, the proposed project would have no impact on delineated mineral resource recovery sites.

References

[DOC] California Department of Conservation. 2019. Guidelines for Classification and Designation of Mineral Lands. Internet web site: https://www.conservation.ca.gov/smgb/Guidelines/Documents/ClassDesig.pdf. Accessed April 5, 2019.

[NYU] New York University. 2015. Mineral Classifications: Santa Cruz County, California, 2015. Internet web site: https://geo.nyu.edu/catalog/stanford-wj672jh4142. Accessed April 5, 2019.

Noise

Environmental Issue Area:	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the project result in:				
a) Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☐	☒	☐	☐
b) Generation of excessive groundborne vibration or groundborne noise levels?	☐	☐	☒	☐
c) For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒

Environmental Setting and Impact Analysis

a) **Potentially Significant Unless Mitigation Incorporated.** Airborne noise dissipates with increasing distance from the noise source. The distances involved depend primarily on the intensity of the noise generated by the source and on the terrain and ground cover between the source and the receiver, and partly on weather conditions such as wind speed and direction, the height and strength of temperature inversions, and the height of cloud cover. Temperature inversions and cloud cover can reflect or refract sound that is radiated upward; this effect can increase noise levels at locations that receive the reflected or refracted sound. Such reflection and refraction effects are important primarily for high-intensity sounds and for the calculation of sound propagation over large distances. For noise sources such as construction activity and vehicle traffic, the region of influence is typically less than 0.5 mile from the noise source. Temperature inversions and cloud cover are not accounted for in this analysis. There would be no change in ambient noise levels during operations of the pipeline.

The region of interest for noise and vibration issues is typically localized. Groundborne vibrations generally attenuate rapidly with increasing distance from the vibration source. The distances involved depend primarily on the intensity of the vibrations generated by the source, and partly on soil and geologic conditions. Detectable vibrations will travel the greatest distance through solid rock and the least distance through loose, unconsolidated soils or saturated soils. For vibration sources such as construction activity and vehicle traffic, the region of influence is typically less than 1,000 feet from the vibration source.

Construction noise, although temporary, can potentially affect nearby sensitive receptors, such as residences. Constructing the proposed project would require using heavy equipment that would be audible at off-site locations. Received noise levels would fluctuate depending on the construction activity, equipment type, and distance between noise source and receiver. Additionally, noise from construction equipment would vary depending on the construction phase and the number and type of equipment at a location at any given time.

Despite the variety in the type and size of construction equipment, similarities in the dominant noise sources and patterns of operation allow construction-related noise ranges to be categorized by work phase. Constructing the jacking and receiving pits would require using cranes, trucks, excavators, and generators. Typical operating cycles for these types of construction equipment could involve 1 or 2 minutes of full-power operation followed by 3 or 4 minutes at lower power settings.

Table 1 lists maximum noise levels recommended for noise impact assessments for typical construction equipment based on a distance of 50 feet between the equipment and a noise receptor. Based on Table 1, the maximum noise level generated by each loader on the proposed project site is assumed to be 86 decibels on the A-weighted scale (dBA) of maximum noise levels (L_{max}) at 50 feet from the earth mover. Each haul truck would generate 88 dBA L_{max} at 50 feet. The maximum noise level generated by water and pickup trucks is approximately 86 dBA L_{max} at 50 feet from these vehicles. Each doubling of a sound source with equal strength increases the noise level by 3 dBA. Because each piece of construction equipment would operate as an independent noise source, the combined noise level at each individual residence during this phase of construction would be 91 dBA L_{max} at a distance of 50 feet from the active construction area.

Equipment shown in Table 1 is a broad overview of construction equipment and associated noise levels. Not all of the equipment listed in Table 1 is being used in this project. Project equipment would mostly include on front loaders and trucks but other equipment such a pile drives, portable generators may also be utilized. See the Equipment section in the Project Description for a complete list of equipment to be used in this project.

Table 1. Typical Maximum Construction Equipment Noise Levels (L_{max}) for Analysis

Type of Equipment	Range of Maximum Sound Levels For Analysis (dBA at 50 feet)	Maximum Sound Levels for Analysis (dBA at 50 feet)
Pile driver, 12,000 to 18,000 ft-lb/blow	81 – 96	93
Rock drill	83 – 99	96
Jackhammer	75 – 85	82
Pneumatic tool	78 – 88	85
Pump	74 – 84	80
Dozer	77 – 90	85
Scraper	83 – 91	87
Haul truck	83 – 94	88
Crane	79 – 86	82
Portable generator	71 – 87	80
Roller	75 – 82	80
Tractor	77 – 82	80
Front-end loader	77 – 90	86
Hydraulic backhoe	81 – 90	86
Hydraulic excavator	81 – 90	86
Grader	79 – 89	86
Air compressor	76 – 89	86
Trucks	81 – 87	86

Source: Bolt et al. 1987

The nearest sensitive receptors to the proposed project site are the residences along River Street (Highway 9) on the west side and along Crossing Road on the east side. The residences on River Street are approximately 100 feet from the western jacking pit. The residences on Crossing Road are approximately 250 feet from the eastern receiving pit. At these distances, the homes on River Street and Crossing Street would be exposed to construction noise levels of up to 85 and 77 dBA L_{max}, respectively.

The total duration of construction is expected to be approximately 34 weeks (see Figure 2 in the Project Description). See the Project Description for a more detailed schedule. With the exception of the microtunneling, all of the construction activities would be conducted during daytime hours. The daytime construction activities would be in compliance with Section 9.36.025 of the City's Municipal Code.

The microtunneling may require up to 3 days of continuous operation at a time that could significantly impact nearby residents. See the Equipment list in the Project Description for a list of equipment to be used during nighttime work. To comply with Section 9.36.010(e) of the City's Municipal Code, written permission would be obtained from the Water Director for construction activities to occur between the hours of 10 pm and 8 am. To reduce potential noise impacts from any nighttime construction, the following mitigation measures would be implemented.

MM-NOI-1: Machinery Maintenance. All on-site machinery shall be maintained in good working order and lubricated as necessary to minimize unnecessary squeals, groans, and other noise. All cabinets, panels, covers, shrouds, and similar components shall be securely fastened to ensure that they do not create excessive noise due to vibration. All machinery to be used on-site shall be equipped with the best available exhaust mufflers and any applicable "hush kits."

MM-NOI-2: Nighttime Machinery. During nighttime work, all unnecessary machinery shall be turned off, any delivery and hauling trucks shall not sit with their engines idling for periods exceeding 5 minutes, and the use of noise producing signals, including horns, whistles, alarms, and bells shall be for safety warning purposes only.

MM-NOI-3: Construction Noise Coordinator. Notify residents within 500 feet of any planned nighttime activities within two weeks of planned activities. A "Construction Noise Coordinator" will be identified. The contact number for the Construction Noise Coordinator will be included on notices distributed to neighbors regarding planned nighttime construction activities. The Construction Noise Coordinator will be responsible for responding to any local concerns or complaints about construction noise. When a concern or complaint is received, the Construction Noise Coordinator shall notify the City, determine the cause of the noise complaint, and implement measures to resolve the complaint, as deemed acceptable by the City.

Therefore, with the implementation of MM-NOI-1, MM-NOI-2, and MM-NOI-3, impacts from increases in ambient noise levels resulting from short-term construction would be less than significant.

Because no changes are proposed for operating the pipeline segment after construction, there would be no change to ambient noise levels during long-term operations, Therefore, there would be no impact from long-term operations.

b) **Less-than-Significant Impact.** Vibration associated with construction of the proposed project could be an annoyance to nearby land uses. The Federal Transit Administration (FTA) has established industry-accepted criteria for groundborne vibration impacts from construction. Construction-related impacts from groundborne vibration on building structures are generally assessed in terms of peak particle velocity (PPV). The impact criteria threshold for fragile structures is 0.12 PPV, while the impact criterion for structures of non-engineered timber and masonry construction is 0.2 PPV.

Construction of the proposed project could require pile driving and could cause temporary vibration impacts on structures and humans. Based on the potential site locations, pile-driving activities would not occur closer than 100 feet from the nearest off-site structures. Because impact pile drivers have higher vibration levels than vibratory pile drivers, the potential vibration impact calculations assume that impact pile drivers would be used. Other construction activities are less intensive than pile driving and would have lower PPV than pile driving. Therefore, vibration levels from pile driving are considered worst case for the project construction. Vibration guidance from the California Department of Transportation (Caltrans) provides the following equation to calculate PPV at sensitive receptors (Caltrans 2013):

$$\text{PPV for impact pile driver} = PPV_{Ref} (25/D)^{n} \times (E_{equip}/E_{Ref})^{0.5} \text{ (in/sec)}$$

where:

PPV_{Ref} = 0.65 in/sec for a reference pile driver at 25 feet
D = distance from pile driver to the receiver in feet
n = 1.1 is a value related to the vibration attenuation rate through ground
E_{equip} is the rated energy of an impact pile driver in foot-pounds (ft-lb)
E_{Ref} is 36,000 ft-lb (rated energy of reference pile driver)

Using the referenced formula and an assumed 19,000 ft-lb rated energy for the impact pile driver, the calculated PPV at the nearest structure (100 feet) would be 0.10 in/sec, which is lower than FTA's 0.12 PPV threshold for fragile structures. Therefore, vibration impacts associated with construction of the proposed project would be less–than-significant.

With the exception of minor maintenance, there would be no increase in groundborne noise or vibration impacts associated with the operation of the proposed project, as there will be no change in operations from current conditions. Therefore, there will be no generation of excessive groundborne vibration or groundborne noise levels during long-term operations.

c) **No Impact.** The proposed project area is not located within the vicinity of a private or public airport. Therefore, the proposed project would not expose people residing or working in the project area to excessive noise levels resulting from aircraft noise, and there would be no impact.

References

Bolt, Richard, Leo Beranek, and Robert Newman. 1987. Noise Control for Buildings and Manufacturing Plants.

[Caltrans] California Department of Transportation. 2013. Transportation and Construction Vibration Guidance Manual. Internet web site: http://www.dot.ca.gov/hq/env/noise/pub/TCVGM_Sep13_FINAL.pdf. Accessed June 24, 2019.

Population and Housing

Environmental Issue Area:	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the project:				
a) Induce substantial unplanned population growth in an area, either directly (e.g., by proposing new homes and businesses) or indirectly (e.g., through extension of roads or other infrastructure)?	☐	☐	☐	☒
b) Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒

Environmental Setting and Impact Analysis

a) **No Impact.** The proposed project would not create any new homes or businesses, or expand existing roads or other infrastructure that could induce unplanned population growth. The proposed project would increase the diameter of a segment of the water pipeline from 20 inches to 24 inches; however, this would not expand the flow in the pipe or increase the amount of water available for use. Therefore, the proposed project would have no impact, either directly or indirectly, to unplanned population growth in the area.

b) **No Impact.** The proposed project would not displace existing residents or require the relocation of existing housing. Therefore, there would be no impact as a result of people or housing displacement.

Public Services

Environmental Issue Area:	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less-than-Significant Impact	No Impact
a) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:				
i) Fire protection?	☐	☐	☐	☒
ii) Police protection?	☐	☐	☐	☒
iii) Schools?	☐	☐	☐	☒
iv) Parks?	☐	☐	☐	☒
v) Other public facilities?	☐	☐	☐	☒

Environmental Setting and Impact Analysis

a)

i) **No Impact.** No new buildings or facilities would be created as a result of the proposed project. Additionally, the number of workers on site during construction would not exceed 15 workers. Therefore, the proposed project would have no impact on service ratios or response times for fire protection in the area.

ii) **No Impact.** No new buildings or facilities would be created as a result of the proposed project. Additionally, the number of workers on site during construction would not exceed 15. Therefore, the proposed project would have no impact on service ratios or response times for police protection in the area.

iii) **No Impact.** It is not anticipated that the proposed project would generate population growth during construction, since the local construction industry can likely accommodate the project without bringing in people from outside. Further, operation of the facility would not increase the capacity of the system or trigger growth. Therefore, no new schools would be required as a result of the proposed project, and the proposed project would have no impact on service ratios for schools in the area.

iv) **No Impact.** There are no parks in the proposed project area, and no parks in adjacent communities would be impacted by the proposed project. Further, the proposed project would not create any new housing or public facilities that would draw visitors to the area. Therefore, the proposed project would have no impact on service ratios for parks in the area.

v) **No Impact.** The purpose of the proposed project is to repair an existing raw water pipeline in order to guarantee a continued water supply to current residences and businesses in the area. This would be a positive impact of the proposed project. No other public facilities would be impacted by the proposed project. Therefore, there would be no negative impacts on other public facilities as a result of the proposed project.

Recreation

Environmental Issue Area:	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the project:				
a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	☐	☐	☐	☒
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities, which might have an adverse physical effect on the environment?	☐	☐	☐	☒

Environmental Setting and Impact Analysis

a) **No Impact.** The proposed project would not create any new housing or public facilities that would draw visitors to the area. Therefore, the proposed project would have no impact on use of neighborhood or regional parks.

b) **No Impact.** The proposed project would not create any new or expand existing recreational facilities. Therefore, the proposed project would have no impact on the environment due to construction or expansion of recreational facilities.

Transportation

Environmental Issue Area:	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the project:				
a) Conflict with a program plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?	☐	☐	☒	☐
b) Conflict with or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?	☐	☐	☒	☐
c) Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☐	☐	☒
d) Result in inadequate emergency access?	☐	☐	☐	☒

Environmental Setting and Impact Analysis

a) **Less-than-Significant Impact.** The City of Santa Cruz 2030 General Plan (City of Santa Cruz 2012) uses level of service (LOS) to evaluate the circulation of the traffic system. A multi-step process has been used in this evaluation to determine whether the temporary construction would cause an impact on the level of service. A detailed analysis is provided in Appendix C of this Initial Study and Mitigated Negative Declaration. The first step was to estimate the peak number of construction trips during the proposed 8-to-9-month construction schedule. The estimation was developed to take into account the potential maximum number of trips. Table 2 shows the estimated number of peak-day construction trips. All construction truck trips are assumed to be heavy vehicles, while worker trips are assumed to be passenger cars.

Table 2. Numbers of Peak-day Construction Trips

Trip Type	Number
Pickup truck	4
Heavy semi-truck	2
Flatbed truck	2
Dump truck	4
Refueling truck	1
Crane	2
Dewatering truck	2
Heavy truck total	**17**
Workers	15
Passenger car total	**15**

The next step was to establish the existing traffic conditions in 2019 at the intersections that construction vehicles would use to access the proposed project site. The intersections of interest were as follows:

- River Street and Highway 1
- Ocean Street and Highway 17
- Ocean Street and Highway 1 southbound off ramp
- Ocean Street and Highway 1 northbound on ramp

The turning counts from the year 2014 from the 1930 Ocean Street Extension Residential Project and Downtown Plan Amendments Draft Environmental Reports (City of Santa Cruz 2017a, Section 4.5; City of Santa Cruz 2017b) provided baseline count data. A growth rate of approximately 1% was calculated using Caltrans' annual average daily traffic from locations in the area. The growth rate was applied to the turning movement counts from 2014 to determine the turning movement counts in 2019 at the intersections.

The final step was to assign the construction trips to the streets and intersections in the proposed project area. An assumption was made that the construction traffic would come from Highway 1 and Highway 17 to access the general proposed project area. The construction traffic would then use River Street (Highway 9) to access the work site on the west side of the San Lorenzo River and Ocean Street and Ocean Street Extension to access the work site on the east side of the river.

Since the total construction trips were minimal, the daily trip generation was added to the PM (afternoon) peak-hour volumes. This assumption is overly conservative since most construction deliveries would happen in the morning and afternoon, and most of the work day would be complete before the PM peak hour begins at 4 pm.

The impact of the temporary construction was determined by comparing with-project traffic operational level of service to the existing conditions. Table 3 presents the comparison for the PM peak-hour level of service at the four study intersections. The temporary construction would increase traffic in the proposed project area. However, as shown, the increase of the temporary construction traffic would not degrade the existing level of service at any of the study intersections. Furthermore, the proposed project would not change the typical operations of the current pump stations, and there would be no impact on bicycle lanes or pedestrian pathways. There is an on-street bicycle lane on Ocean Street; however, it would not be impacted. Finally, bus transit stops and access would not be changed by the temporary construction traffic since no lane closures would be required. Therefore, the proposed project would not conflict with a program plan, ordinance, or policy addressing the circulation system and would have a less-than-significant impact.

Table 3. Level of Service Results and Comparisons for Existing and Construction Traffic Conditions in 2019 during the PM Peak Hour

Intersection	2019 Existing		2019 Construction		Difference (sec)
	Delay (sec)	LOS	Delay (sec)	LOS	
River St and Hwy 1	74.4	E	75.5	E	1.1
Ocean St and Hwy 17	44.0	D	46.0	D	2.0
Ocean St and Hwy 1 SB off ramp	27.9	D	30.7	D	2.8
Ocean St and Hwy 1 NB on ramp	4.3	A	4.4	A	0.1

Hwy = highway, LOS = level of service, NB = northbound, SB = southbound, St = street, sec = seconds

b) **Less-than-Significant Impact.** The proposed project would not cause a long-term increase in the amount of vehicle-miles traveled. Implementation of the proposed project would cause a minor short-term increase in the amount of vehicle-miles traveled due to labor and materials deliveries during construction, which is estimated to last up to 9 months. Therefore, the proposed project would not conflict with or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b), which sets the criteria for assessing transportation impacts, and the proposed project would have a less-than-significant impact.

c) **No Impact.** The proposed project would not change geometric design features or require incompatible uses. The temporary construction work on the east side of the San Lorenzo River would be accessed using non-designated truck routes (Ocean Street, Ocean Street Extension, and Crossing Street) only when construction is occurring on the east side of the river. The temporary construction would last for 8 to 9 months. Therefore, the proposed project would not substantially increase public hazards due to a change in a geometric design feature or incompatible use and would have no impact related to traffic hazards.

d) **No Impact.** The proposed project and temporary construction would not result in inadequate emergency access. Therefore, the proposed project would have no impact.

References

City of Santa Cruz. 2012. City of Santa Cruz 2030 General Plan. Internet web site: http://www.cityofsantacruz.com/home/showdocument?id=33418. June 2012. Accessed April 8, 2019.

City of Santa Cruz. 2017a. 1930 Ocean Street Extension Residential Project Draft Environmental Report. Internet web site: http://www.cityofsantacruz.com/Home/Components/BusinessDirectory/BusinessDirectory/96/1775?alpha=O.2017. May 2017. Accessed April 8, 2019.

City of Santa Cruz. 2017b. Downtown Plan Amendments Draft Environmental Report. Internet web site: http://www.cityofsantacruz.com/Home/Components/BusinessDirectory/BusinessDirectory/101/1775?alpha=D. July 2017. Accessed April 8, 2019.

Tribal Cultural Resources

Environmental Issue Area:	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the project cause a substantial adverse change in the significance of a tribal cultural resource defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:				
a) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k)?	☐	☒	☐	☐
b) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resources Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe?	☐	☒	☐	☐

Environmental Setting and Impact Analysis

a) **Potentially Significant Unless Mitigation Incorporated.** Per the attached Cultural Technical Memorandum (City of Santa Cruz and HDR Engineering 2019), no sites that are listed in or eligible for listing in the California Register of Historical Resources or local register for historical resources, which could potentially be considered as a tribal cultural resource, have been identified in the proposed project area. Although, prior to this project, no California Native American Tribes and/or Tribal Representatives requested project notifications under the provisions of Assembly Bill 52, outreach with the Native American Heritage Commission (NAHC) and local tribal community has been initiated. In a letter dated June 25, 2019 (Appendix D), the NAHC indicated that their search of the Sacred Lands File was negative. On July 2, 2019, project notification letters which included project background, location maps, and contact information were sent to all five of the Native American contacts provided on the NAHC's contact list. The purpose of this outreach was to identify sites or tribal cultural resources of Native American interest or concern that may be impacted by the proposed project and to solicit opinions for avoiding or mitigating potential impacts to such resources. Of the notification letters sent, the City has received one email response of concern for cultural resources which may be impacted by the project. Dr. Rob Cuthrell, Director of Archaeological Resource Management for the Amah Mutsun Land Trust and representing the Amah Mutsun Tribal Band, indicated that the Tribe considers areas within 400 feet of permanent water sources to have high potential for tribal cultural resources. No other responses have been received. Outreach to the Native American community, including direct consultation with the Amah Mutsun Tribal Band, will continue throughout the Project.

Finally, as described above in the Cultural Resources section, the inadvertent discovery of cultural materials or human remains during project-related ground-disturbing activities could result in significant impacts if not properly managed. Any inadvertent discovery might also be potentially considered as a tribal cultural resource.

With the implementation of MM-CUL-1, MM-CUL-2, and MM-CUL-3, impacts on newly discovered tribal cultural resources would be less than significant.

b) **Potentially Significant Unless Mitigation Incorporated.** Similar to the analysis above, to date, no sites of tribal importance have been identified in the proposed project area. Tribal cultural resources, if encountered, would be considered an inadvertent discovery and subject to the same provisions and protections as those noted above.

With the implementation of MM-CUL-1, MM-CUL-2, and MM-CUL-3, impacts on newly discovered tribal cultural resources would be less than significant.

References

City of Santa Cruz and HDR Engineering. 2019. Cultural Resources: Summary of Record Search Results. February 12, 2019.

Utilities and Service Systems

Environmental Issue Area:	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the project:				
a) Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?	☐	☐	☐	☒
b) Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?	☐	☐	☐	☒
c) Result in a determination by the wastewater treatment provider, which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	☐	☐	☐	☒
d) Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?	☐	☐	☐	☒
e) Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?	☐	☐	☐	☒

Environmental Setting and Impact Analysis

a) **No Impact.** The proposed project would construct a new segment of raw water pipeline that would run under the San Lorenzo River to replace an old pipeline segment that is in need of repair. The old pipeline segment would be capped and decommissioned in place. Dewatering would take place during construction. Water encountered during pit excavation would be placed into a settling tank before being trucked to a nearby sewer main for discharge in accordance with a construction NPDES permit developed by the contractor prior to the start of construction. Because the proposed project is limited to replacing an underground raw water pipeline, it would not result in the relocation or construction of new or expanded water, wastewater treatment, or storm water drainage, electric power, natural gas, or telecommunications facilities during either construction or long-term operations. Therefore, the proposed project would not relocate or expand water or wastewater facilities or other utility facilities, and there would be no impact.

b) **No Impact.** The proposed project would not create additional need for water supply in the future; water would be provided to the contractor by the City during construction, as needed. The proposed project is limited to replacing an existing raw water pipeline to serve surrounding residences, businesses, and public facilities for their water needs in the future. This would be a positive impact of the proposed project. Therefore, the proposed project would have no negative impacts on water supply in any water year type.

c) **No Impact.** Water encountered during pit excavation would be placed into a settling tank before being trucked to a nearby sewer main for discharge in accordance with a construction NPDES permit to be acquired by the contractor prior to the start of construction. Therefore, the proposed project would not impact local wastewater treatment.

d) **No Impact.** The proposed project would generate a minor amount of solid waste during construction; the existing segment of pipe to be decommissioned would be capped and retained in place. No major demolition is required to implement the proposed project, and minimal spoils are anticipated. In addition, the proposed project would comply with all relevant federal, state, and local statutes and regulations related to generating and disposing of solid waste. As required by the U.S. Occupational Safety and health Administration (OSHA), one portable toilet with hand-washing facilities per 15 on-site workers would be provided and maintained in a serviceable condition on site for the duration of the construction period. Therefore, there would be no impacts from the proposed project to local solid waste infrastructure.

e) **No Impact.** The proposed project would not impact local solid waste infrastructure, as described in d). Therefore, the proposed project would comply with federal, state, and local management and reduction statutes and regulations related to solid waste, and there would be no impact as a result of the proposed project.

Wildfire

Environmental Issue Area:	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less-than-Significant Impact	No Impact
If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:				
a) Substantially impair an adopted emergency response plan or emergency evacuation plan?	☐	☐	☐	☒
b) Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?	☐	☐	☐	☒
c) Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?	☐	☐	☐	☒
d) Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?	☐	☐	☐	☒

Environmental Setting and Impact Analysis

a) **No Impact.** The proposed project site is located in an area classified as a moderate and unzoned local responsibility area. In these areas, fire protection is provided by the city fire department (CAL FIRE 2008). Therefore, the proposed project would have no impact on state responsibility area high fire hazard severity zones and their emergency response plans.

b) **No Impact.** The proposed project site is located in an area classified as a moderate and unzoned local responsibility area (CAL FIRE 2008). Therefore, the proposed project would have no impact on state responsibility area high fire hazard severity zones and the spread of wildfires in these areas.

c) **No Impact.** The proposed project site is located in an area classified as a moderate and unzoned local responsibility area (CAL FIRE 2008). Therefore, the proposed project would have no impact on state responsibility area high fire hazard severity zones and the installation or maintenance of infrastructure in these areas.

d) **No Impact.** The proposed project site is located in an area classified as a moderate and unzoned local responsibility area (CAL FIRE 2008). Therefore, the proposed project would have no impact on state responsibility area high fire hazard severity zones and the exposure of people or structures to wildfire risks in these areas.

References

CAL FIRE. 2008. Santa Cruz County Draft Fire Hazard Severity Zones in LRA [Local Responsibility Areas]. Internet web site: http://frap.fire.ca.gov/webdata/maps/santa_cruz/fhszl06_1_map.44.pdf. September 2007. Updated June 2008. Accessed April 5, 2019.

Mandatory Findings of Significance

Environmental Issue Area:	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less-than-Significant Impact	No Impact
a) Does the project have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	☐	☐	☒	☐
b) Does the project have impacts that are individually limited, but cumulatively considerable ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?	☐	☐	☒	☐
c) Does the project have environmental effects, which will cause substantial adverse effects on human beings, either directly or indirectly?	☐	☐	☐	☒

Environmental Setting and Impact Analysis

a) **Less-than-Significant Impact.** The proposed project area is approximately 2 acres and includes temporary and geographically isolated construction to install a replacement raw water pipeline segment by microtunnel under the San Lorenzo River to connect to the existing water conveyance system and, subsequently, to restore the area to preconstruction conditions. The Water Department would then cap and abandon in place the existing pipeline segment. This proposed project is designed to minimize the environmental impacts on the active channel, surrounding habitats, sensitive species, and historic and prehistoric resources. The Project Description includes environmental protection measures to reduce the potential for impacts, such as development of an Inadvertent Release Contingency Plan, installation of exclusionary fences, lighting control, and site restoration. In addition, where necessary, mitigation measures are proposed to offset the remaining potential for impacts.
A biological monitor and worker environmental awareness training measure (MM-BIO-1) would be implemented to minimize impacts on special-status fish and other special-status species. In addition, construction clearance surveys (MM-BIO-2) and wildlife entrapment avoidance measures (MM-BIO-3) would be implemented to further minimize impacts on special-status amphibians and mammals. Migratory bird, special-status bird, and raptor surveys (MM-BIO-4) and nesting bird avoidance measures (MM-BIO-5) would also be implemented to avoid impacts on birds. Personnel training and development of a monitoring program by an archaeologist (MM-CUL-1), archaeological and tribal monitoring (MM-CUL-2), procedures for the discovery of human remains (MM-CUL-3), and procedures for the discovery of paleontological resources (MM-GEO-1) would be implemented to minimize impacts on cultural and historic resources.

Given the limited footprint of disturbance and incorporation of environmental protection measures and mitigation measures to reduce the potential for adverse impacts, impacts from the proposed project are not expected to substantially degrade the quality of the environment, substantially reduce the number or restrict the range of a rare or endangered plant or animal, or eliminate important examples of the major periods of California history or prehistory. As a result, this impact would be less than significant.

b) **Less-than-Significant Impact.** Because the proposed pipeline segment would be installed on City and public land, other cumulative activities at this location would be primarily led by the City. As examples, ongoing operations and proposed activities and upgrades at the Coast Pump Station, on the San Lorenzo River, or at the San Lorenzo River/Tait Street Diversion could occur during or following the proposed construction window; however, these construction activities would be coordinated. The Water Department would also coordinate with the homeless encampment in the area to facilitate moving campers out during microtunneling activities. Several additional projects, listed below, are planned in the vicinity of the proposed project area. These other projects have been considered for all resources.

The Ocean Street Extension Project is a 32-unit residential-development project planned at 1930 Ocean Street (City of Santa Cruz 2019). There is a potential for construction traffic overlap wherein traffic from the Ocean Street Extension Project and the proposed project could create added congestion on the roads, primarily from crew vehicles. The overlap in time is expected to be limited, meaning that the resulting cumulative impact would be small, although, if one or both project schedules shift, the impact could as well. Because of the small volume of traffic associated with the proposed project in this area, this cumulative impact would be less than significant.

The Ocean Street Main Replacement Project and the Graham Hill Water Treatment Plant Concrete Tanks Replacement Project (located less than 1 mile north of the Project on Graham Hill Road) could also add to these cumulative traffic impacts. However, because of the different locations and timeframes, this impact is not expected to be measurable. The Graham Hill Water Treatment Plant Concrete Tanks Replacement Project might use the Santa Cruz Cemetery Corporation property for staging. Because this site is also being considered for secondary staging as part of the proposed project, traffic and staging space would be coordinated between these two Water Department projects.

CalTrans plans to improve the intersections at the junction of Highway 1 and Highway 9 and at the junction of Highway 1 and Highway 17 beginning in June 2019 and continuing through the end of 2020. This work is scheduled to occur in the nights and early mornings, Sundays through Fridays, from 9 pm through 6 am. Because proposed project construction is scheduled to occur between 8 am and 6 pm Monday through Friday with limited nighttime work, these projects are not anticipated to conflict with each other. Further, if nighttime work for the proposed project were to occur when a junction is detoured, the project's traffic volumes are projected to be low and are not expected to have an impact. These impacts would be less than significant.

Although several other projects are planned in the vicinity of the proposed project and potentially cumulative transportation impacts could result, construction impacts would be short-term and temporary. Additionally, because of the small size of the proposed project and because other routes are present in the vicinity of these other projects, disaster evacuation routes would not be lost. Further, impacts on noise from construction projects would not be additive, and would be mitigated for nearby residents during Project microtunneling work by MM-NOI-1 MM-NOI-2, and MM-NOI-3. Finally, the addition of stormwater BMPs as part of the construction SWPPP would alleviate increased erosion and sedimentation rates on nearby residential properties and in the San Lorenzo River. Therefore, the impacts of the proposed project combined with the impacts of other past, present, and reasonably foreseeable future projects in the vicinity would not be cumulatively considerable.

c) **No Impact.** The proposed project would replace a segment of existing, degraded water conveyance pipeline and provide a more reliable water pipeline to serve residences and businesses in the area. This would be a positive impact on people in the area. No activities would either directly or indirectly cause an adverse impact on human beings. Therefore, the proposed project would have no adverse effects on human beings, either directly or indirectly.

References

City of Santa Cruz. 2019. 1930 Ocean Street Extension. Internet web site: http://www.cityofsantacruz.com/government/city-departments/planning-and-community-development/active-planning-applications-and-status/1930-ocean-street-extension. Accessed June 27, 2019.

Appendices

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Biological Resources Queries and Tables

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CNDDB 9-Quad Species List 375 records.

Element Type	Scientific Name	Common Name	Element Code	Federal Status	State Status	CDFW Status	CA Rare Plant Rank	Quad Code	Quad Name	Data Status	Taxonomic Sort
Animals - Amphibians	Ambystoma californiense	California tiger salamander	AAAAA01180	Threatened	Threatened	WL	-	3712212	Davenport	Unprocessed	Animals - Amphibians - Ambystomatidae - Ambystoma californiense
Animals - Amphibians	Ambystoma macrodactylum croceum	Santa Cruz long-toed salamander	AAAAA01082	Endangered	Endangered	FP	-	3612188	Soquel	Mapped and Unprocessed	Animals - Amphibians - Ambystomatidae - Ambystoma macrodactylum croceum
Animals - Amphibians	Dicamptodon ensatus	California giant salamander	AAAAH01020	None	None	SSC	-	3612188	Soquel	Mapped and Unprocessed	Animals - Amphibians - Dicamptodontidae - Dicamptodon ensatus
Animals - Amphibians	Dicamptodon ensatus	California giant salamander	AAAAH01020	None	None	SSC	-	3612281	Santa Cruz	Mapped and Unprocessed	Animals - Amphibians - Dicamptodontidae - Dicamptodon ensatus
Animals - Amphibians	Dicamptodon ensatus	California giant salamander	AAAAH01020	None	None	SSC	-	3712118	Laurel	Mapped and Unprocessed	Animals - Amphibians - Dicamptodontidae - Dicamptodon ensatus
Animals - Amphibians	Dicamptodon ensatus	California giant salamander	AAAAH01020	None	None	SSC	-	3712212	Davenport	Mapped and Unprocessed	Animals - Amphibians - Dicamptodontidae - Dicamptodon ensatus
Animals - Amphibians	Dicamptodon ensatus	California giant salamander	AAAAH01020	None	None	SSC	-	3712211	Felton	Mapped and Unprocessed	Animals - Amphibians - Dicamptodontidae - Dicamptodon ensatus
Animals - Amphibians	Dicamptodon ensatus	California giant salamander	AAAAH01020	None	None	SSC	-	3712213	Ano Nuevo	Mapped and Unprocessed	Animals - Amphibians - Dicamptodontidae - Dicamptodon ensatus
Animals - Amphibians	Aneides flavipunctatus niger	Santa Cruz black salamander	AAAAD01070	None	None	SSC	-	3712213	Ano Nuevo	Mapped	Animals - Amphibians - Plethodontidae - Aneides flavipunctatus niger
Animals - Amphibians	Aneides flavipunctatus niger	Santa Cruz black salamander	AAAAD01070	None	None	SSC	-	3712211	Felton	Mapped and Unprocessed	Animals - Amphibians - Plethodontidae - Aneides flavipunctatus niger
Animals - Amphibians	Aneides flavipunctatus niger	Santa Cruz black salamander	AAAAD01070	None	None	SSC	-	3712212	Davenport	Mapped and Unprocessed	Animals - Amphibians - Plethodontidae - Aneides flavipunctatus niger
Animals - Amphibians	Aneides flavipunctatus niger	Santa Cruz black salamander	AAAAD01070	None	None	SSC	-	3712118	Laurel	Mapped and Unprocessed	Animals - Amphibians - Plethodontidae - Aneides flavipunctatus niger
Animals - Amphibians	Aneides flavipunctatus niger	Santa Cruz black salamander	AAAAD01070	None	None	SSC	-	3612281	Santa Cruz	Mapped and Unprocessed	Animals - Amphibians - Plethodontidae - Aneides flavipunctatus niger
Animals - Amphibians	Aneides flavipunctatus niger	Santa Cruz black salamander	AAAAD01070	None	None	SSC	-	3612188	Soquel	Unprocessed	Animals - Amphibians - Plethodontidae - Aneides flavipunctatus niger

Animals - Amphibians	Rana boylii	foothill yellow-legged frog	AAABH01050	None	Candidate Threatened	SSC	-	3612188	Soquel	Mapped	Animals - Amphibians - Ranidae - Rana boylii
Animals - Amphibians	Rana boylii	foothill yellow-legged frog	AAABH01050	None	Candidate Threatened	SSC	-	3612281	Santa Cruz	Mapped	Animals - Amphibians - Ranidae - Rana boylii
Animals - Amphibians	Rana boylii	foothill yellow-legged frog	AAABH01050	None	Candidate Threatened	SSC	-	3712118	Laurel	Mapped	Animals - Amphibians - Ranidae - Rana boylii
Animals - Amphibians	Rana boylii	foothill yellow-legged frog	AAABH01050	None	Candidate Threatened	SSC	-	3712212	Davenport	Mapped	Animals - Amphibians - Ranidae - Rana boylii
Animals - Amphibians	Rana boylii	foothill yellow-legged frog	AAABH01050	None	Candidate Threatened	SSC	-	3712211	Felton	Mapped	Animals - Amphibians - Ranidae - Rana boylii
Animals - Amphibians	Rana boylii	foothill yellow-legged frog	AAABH01050	None	Candidate Threatened	SSC	-	3712213	Ano Nuevo	Mapped	Animals - Amphibians - Ranidae - Rana boylii
Animals - Amphibians	Rana draytonii	California red-legged frog	AAABH01022	Threatened	None	SSC	-	3712213	Ano Nuevo	Mapped and Unprocessed	Animals - Amphibians - Ranidae - Rana draytonii
Animals - Amphibians	Rana draytonii	California red-legged frog	AAABH01022	Threatened	None	SSC	-	3712211	Felton	Mapped and Unprocessed	Animals - Amphibians - Ranidae - Rana draytonii
Animals - Amphibians	Rana draytonii	California red-legged frog	AAABH01022	Threatened	None	SSC	-	3712212	Davenport	Mapped and Unprocessed	Animals - Amphibians - Ranidae - Rana draytonii
Animals - Amphibians	Rana draytonii	California red-legged frog	AAABH01022	Threatened	None	SSC	-	3712118	Laurel	Mapped and Unprocessed	Animals - Amphibians - Ranidae - Rana draytonii
Animals - Amphibians	Rana draytonii	California red-legged frog	AAABH01022	Threatened	None	SSC	-	3612281	Santa Cruz	Mapped and Unprocessed	Animals - Amphibians - Ranidae - Rana draytonii
Animals - Amphibians	Rana draytonii	California red-legged frog	AAABH01022	Threatened	None	SSC	-	3612188	Soquel	Unprocessed	Animals - Amphibians - Ranidae - Rana draytonii
Animals - Amphibians	Taricha torosa	Coast Range newt	AAAAF02032	None	None	SSC	-	3612281	Santa Cruz	Unprocessed	Animals - Amphibians - Salamandridae - Taricha torosa
Animals - Amphibians	Taricha torosa	Coast Range newt	AAAAF02032	None	None	SSC	-	3712118	Laurel	Unprocessed	Animals - Amphibians - Salamandridae - Taricha torosa
Animals - Amphibians	Taricha torosa	Coast Range newt	AAAAF02032	None	None	SSC	-	3712212	Davenport	Unprocessed	Animals - Amphibians - Salamandridae - Taricha torosa
Animals - Amphibians	Taricha torosa	Coast Range newt	AAAAF02032	None	None	SSC	-	3712211	Felton	Unprocessed	Animals - Amphibians - Salamandridae - Taricha torosa
Animals - Amphibians	Taricha torosa	Coast Range newt	AAAAF02032	None	None	SSC	-	3712213	Ano Nuevo	Unprocessed	Animals - Amphibians - Salamandridae - Taricha torosa
Animals - Amphibians	Spea hammondii	western spadefoot	AAABF02020	None	None	SSC	-	3712213	Ano Nuevo	Unprocessed	Animals - Amphibians - Scaphiopodidae - Spea hammondii
Animals - Amphibians	Spea hammondii	western spadefoot	AAABF02020	None	None	SSC	-	3712212	Davenport	Unprocessed	Animals - Amphibians - Scaphiopodidae - Spea hammondii

Animals - Arachnids	Meta dolloff	Dolloff Cave spider	ILARA17010	None	None	-	-	3612281	Santa Cruz	Mapped	Animals - Arachnids - Araneidae - Meta dolloff
Animals - Arachnids	Neochthonius imperialis	Empire Cave pseudoscorpion	ILARAD1010	None	None	-	-	3612281	Santa Cruz	Mapped	Animals - Arachnids - Chthoniidae - Neochthonius imperialis
Animals - Arachnids	Fissilicreagris imperialis	Empire Cave pseudoscorpion	ILARAE5010	None	None	-	-	3612281	Santa Cruz	Mapped	Animals - Arachnids - Neobisiidae - Fissilicreagris imperialis
Animals - Birds	Accipiter cooperii	Cooper's hawk	ABNKC12040	None	None	WL	-	3712211	Felton	Mapped	Animals - Birds - Accipitridae - Accipiter cooperii
Animals - Birds	Accipiter striatus	sharp-shinned hawk	ABNKC12020	None	None	WL	-	3712118	Laurel	Unprocessed	Animals - Birds - Accipitridae - Accipiter striatus
Animals - Birds	Aquila chrysaetos	golden eagle	ABNKC22010	None	None	FP , WL	-	3712118	Laurel	Unprocessed	Animals - Birds - Accipitridae - Aquila chrysaetos
Animals - Birds	Aquila chrysaetos	golden eagle	ABNKC22010	None	None	FP , WL	-	3612281	Santa Cruz	Unprocessed	Animals - Birds - Accipitridae - Aquila chrysaetos
Animals - Birds	Aquila chrysaetos	golden eagle	ABNKC22010	None	None	FP , WL	-	3612188	Soquel	Unprocessed	Animals - Birds - Accipitridae - Aquila chrysaetos
Animals - Birds	Aquila chrysaetos	golden eagle	ABNKC22010	None	None	FP , WL	-	3712211	Felton	Unprocessed	Animals - Birds - Accipitridae - Aquila chrysaetos
Animals - Birds	Circus hudsonius	northern harrier	ABNKC11011	None	None	SSC	-	3712212	Davenport	Unprocessed	Animals - Birds - Accipitridae - Circus hudsonius
Animals - Birds	Elanus leucurus	white-tailed kite	ABNKC06010	None	None	FP	-	3712211	Felton	Mapped	Animals - Birds - Accipitridae - Elanus leucurus
Animals - Birds	Elanus leucurus	white-tailed kite	ABNKC06010	None	None	FP	-	3612188	Soquel	Unprocessed	Animals - Birds - Accipitridae - Elanus leucurus
Animals - Birds	Elanus leucurus	white-tailed kite	ABNKC06010	None	None	FP	-	3612281	Santa Cruz	Unprocessed	Animals - Birds - Accipitridae - Elanus leucurus
Animals - Birds	Elanus leucurus	white-tailed kite	ABNKC06010	None	None	FP	-	3712118	Laurel	Unprocessed	Animals - Birds - Accipitridae - Elanus leucurus
Animals - Birds	Haliaeetus leucocephalus	bald eagle	ABNKC10010	Delisted	Endangered	FP	-	3712118	Laurel	Unprocessed	Animals - Birds - Accipitridae - Haliaeetus leucocephalus
Animals - Birds	Brachyramphus marmoratus	marbled murrelet	ABNNN06010	Threatened	Endangered	-	-	3712211	Felton	Mapped	Animals - Birds - Alcidae - Brachyramphus marmoratus
Animals - Birds	Brachyramphus marmoratus	marbled murrelet	ABNNN06010	Threatened	Endangered	-	-	3712212	Davenport	Mapped	Animals - Birds - Alcidae - Brachyramphus marmoratus
Animals - Birds	Brachyramphus marmoratus	marbled murrelet	ABNNN06010	Threatened	Endangered	-	-	3712213	Ano Nuevo	Mapped	Animals - Birds - Alcidae - Brachyramphus marmoratus
Animals - Birds	Chaetura vauxi	Vaux's swift	ABNUA03020	None	None	SSC	-	3712118	Laurel	Unprocessed	Animals - Birds - Apodidae - Chaetura vauxi
Animals - Birds	Chaetura vauxi	Vaux's swift	ABNUA03020	None	None	SSC	-	3612188	Soquel	Unprocessed	Animals - Birds - Apodidae - Chaetura vauxi
Animals - Birds	Cypseloides niger	black swift	ABNUA01010	None	None	SSC	-	3612281	Santa Cruz	Mapped and Unprocessed	Animals - Birds - Apodidae - Cypseloides niger
Animals - Birds	Cypseloides niger	black swift	ABNUA01010	None	None	SSC	-	3712118	Laurel	Unprocessed	Animals - Birds - Apodidae - Cypseloides niger

Animals - Birds	Cypseloides niger	black swift	ABNUA01010	None	None	SSC	-	3712212	Davenport	Mapped and Unprocessed	Animals - Birds - Apodidae - Cypseloides niger
Animals - Birds	Cypseloides niger	black swift	ABNUA01010	None	None	SSC	-	3712213	Ano Nuevo	Mapped	Animals - Birds - Apodidae - Cypseloides niger
Animals - Birds	Ardea herodias	great blue heron	ABNGA04010	None	None	-	-	3712211	Felton	Unprocessed	Animals - Birds - Ardeidae - Ardea herodias
Animals - Birds	Ardea herodias	great blue heron	ABNGA04010	None	None	-	-	3612281	Santa Cruz	Mapped and Unprocessed	Animals - Birds - Ardeidae - Ardea herodias
Animals - Birds	Gymnogyps californianus	California condor	ABNKA03010	Endangered	Endangered	FP	-	3612281	Santa Cruz	Unprocessed	Animals - Birds - Cathartidae - Gymnogyps californianus
Animals - Birds	Gymnogyps californianus	California condor	ABNKA03010	Endangered	Endangered	FP	-	3612188	Soquel	Unprocessed	Animals - Birds - Cathartidae - Gymnogyps californianus
Animals - Birds	Charadrius alexandrinus nivosus	western snowy plover	ABNNB03031	Threatened	None	SSC	-	3612281	Santa Cruz	Mapped and Unprocessed	Animals - Birds - Charadriidae - Charadrius alexandrinus nivosus
Animals - Birds	Charadrius alexandrinus nivosus	western snowy plover	ABNNB03031	Threatened	None	SSC	-	3712212	Davenport	Mapped and Unprocessed	Animals - Birds - Charadriidae - Charadrius alexandrinus nivosus
Animals - Birds	Charadrius alexandrinus nivosus	western snowy plover	ABNNB03031	Threatened	None	SSC	-	3712213	Ano Nuevo	Mapped and Unprocessed	Animals - Birds - Charadriidae - Charadrius alexandrinus nivosus
Animals - Birds	Charadrius montanus	mountain plover	ABNNB03100	None	None	SSC	-	3612281	Santa Cruz	Unprocessed	Animals - Birds - Charadriidae - Charadrius montanus
Animals - Birds	Falco peregrinus anatum	American peregrine falcon	ABNKD06071	Delisted	Delisted	FP	-	3712118	Laurel	Unprocessed	Animals - Birds - Falconidae - Falco peregrinus anatum
Animals - Birds	Spinus lawrencei	Lawrence's goldfinch	ABPBY06100	None	None	-	-	3612281	Santa Cruz	Unprocessed	Animals - Birds - Fringillidae - Spinus lawrencei
Animals - Birds	Spinus lawrencei	Lawrence's goldfinch	ABPBY06100	None	None	-	-	3712211	Felton	Unprocessed	Animals - Birds - Fringillidae - Spinus lawrencei
Animals - Birds	Progne subis	purple martin	ABPAU01010	None	None	SSC	-	3612188	Soquel	Unprocessed	Animals - Birds - Hirundinidae - Progne subis
Animals - Birds	Progne subis	purple martin	ABPAU01010	None	None	SSC	-	3712118	Laurel	Unprocessed	Animals - Birds - Hirundinidae - Progne subis
Animals - Birds	Riparia riparia	bank swallow	ABPAU08010	None	Threatened	-	-	3612281	Santa Cruz	Mapped	Animals - Birds - Hirundinidae - Riparia riparia
Animals - Birds	Riparia riparia	bank swallow	ABPAU08010	None	Threatened	-	-	3712213	Ano Nuevo	Mapped	Animals - Birds - Hirundinidae - Riparia riparia
Animals - Birds	Agelaius tricolor	tricolored blackbird	ABPBXB0020	None	Candidate Endangered	SSC	-	3712213	Ano Nuevo	Mapped and Unprocessed	Animals - Birds - Icteridae - Agelaius tricolor
Animals - Birds	Agelaius tricolor	tricolored blackbird	ABPBXB0020	None	Candidate Endangered	SSC	-	3612281	Santa Cruz	Mapped and Unprocessed	Animals - Birds - Icteridae - Agelaius tricolor
Animals - Birds	Agelaius tricolor	tricolored blackbird	ABPBXB0020	None	Candidate Endangered	SSC	-	3712212	Davenport	Mapped	Animals - Birds - Icteridae - Agelaius tricolor
Animals - Birds	Icteria virens	yellow-breasted chat	ABPBX24010	None	None	SSC	-	3612281	Santa Cruz	Unprocessed	Animals - Birds - Icteriidae - Icteria virens
Animals - Birds	Icteria virens	yellow-breasted chat	ABPBX24010	None	None	SSC	-	3612188	Soquel	Unprocessed	Animals - Birds - Icteriidae - Icteria virens

Animals - Birds	Lanius ludovicianus	loggerhead shrike	ABPBR01030	None	None	SSC	-	3612188	Soquel	Unprocessed	Animals - Birds - Laniidae - Lanius ludovicianus
Animals - Birds	Lanius ludovicianus	loggerhead shrike	ABPBR01030	None	None	SSC	-	3612281	Santa Cruz	Unprocessed	Animals - Birds - Laniidae - Lanius ludovicianus
Animals - Birds	Lanius ludovicianus	loggerhead shrike	ABPBR01030	None	None	SSC	-	3712118	Laurel	Unprocessed	Animals - Birds - Laniidae - Lanius ludovicianus
Animals - Birds	Pandion haliaetus	osprey	ABNKC01010	None	None	WL	-	3712118	Laurel	Mapped	Animals - Birds - Pandionidae - Pandion haliaetus
Animals - Birds	Pandion haliaetus	osprey	ABNKC01010	None	None	WL	-	3612281	Santa Cruz	Unprocessed	Animals - Birds - Pandionidae - Pandion haliaetus
Animals - Birds	Pandion haliaetus	osprey	ABNKC01010	None	None	WL	-	3712211	Felton	Mapped	Animals - Birds - Pandionidae - Pandion haliaetus
Animals - Birds	Geothlypis trichas sinuosa	saltmarsh common yellowthroat	ABPBX1201A	None	None	SSC	-	3712212	Davenport	Mapped	Animals - Birds - Parulidae - Geothlypis trichas sinuosa
Animals - Birds	Geothlypis trichas sinuosa	saltmarsh common yellowthroat	ABPBX1201A	None	None	SSC	-	3712118	Laurel	Unprocessed	Animals - Birds - Parulidae - Geothlypis trichas sinuosa
Animals - Birds	Passerculus sandwichensis alaudinus	Bryant's savannah sparrow	ABPBX99011	None	None	SSC	-	3612281	Santa Cruz	Unprocessed	Animals - Birds - Passerellidae - Passerculus sandwichensis alaudinus
Animals - Birds	Pelecanus occidentalis californicus	California brown pelican	ABNFC01021	Delisted	Delisted	FP	-	3612281	Santa Cruz	Unprocessed	Animals - Birds - Pelecanidae - Pelecanus occidentalis californicus
Animals - Birds	Pelecanus occidentalis californicus	California brown pelican	ABNFC01021	Delisted	Delisted	FP	-	3612188	Soquel	Unprocessed	Animals - Birds - Pelecanidae - Pelecanus occidentalis californicus
Animals - Birds	Pelecanus occidentalis californicus	California brown pelican	ABNFC01021	Delisted	Delisted	FP	-	3712213	Ano Nuevo	Unprocessed	Animals - Birds - Pelecanidae - Pelecanus occidentalis californicus
Animals - Birds	Phalacrocorax auritus	double-crested cormorant	ABNFD01020	None	None	WL	-	3612188	Soquel	Unprocessed	Animals - Birds - Phalacrocoracidae - Phalacrocorax auritus
Animals - Birds	Coturnicops noveboracensis	yellow rail	ABNME01010	None	None	SSC	-	3612188	Soquel	Mapped	Animals - Birds - Rallidae - Coturnicops noveboracensis
Animals - Birds	Coturnicops noveboracensis	yellow rail	ABNME01010	None	None	SSC	-	3612281	Santa Cruz	Mapped	Animals - Birds - Rallidae - Coturnicops noveboracensis
Animals - Birds	Coturnicops noveboracensis	yellow rail	ABNME01010	None	None	SSC	-	3712118	Laurel	Mapped	Animals - Birds - Rallidae - Coturnicops noveboracensis
Animals - Birds	Coturnicops noveboracensis	yellow rail	ABNME01010	None	None	SSC	-	3712212	Davenport	Mapped	Animals - Birds - Rallidae - Coturnicops noveboracensis
Animals - Birds	Coturnicops noveboracensis	yellow rail	ABNME01010	None	None	SSC	-	3712211	Felton	Mapped	Animals - Birds - Rallidae - Coturnicops noveboracensis
Animals - Birds	Laterallus jamaicensis coturniculus	California black rail	ABNME03041	None	Threatened	FP	-	3612281	Santa Cruz	Mapped	Animals - Birds - Rallidae - Laterallus jamaicensis coturniculus

Animals - Birds	Laterallus jamaicensis coturniculus	California black rail	ABNME03041	None	Threatened	FP	-	3712213	Ano Nuevo	Mapped	Animals - Birds - Rallidae - Laterallus jamaicensis coturniculus
Animals - Birds	Athene cunicularia	burrowing owl	ABNSB10010	None	None	SSC	-	3612281	Santa Cruz	Mapped and Unprocessed	Animals - Birds - Strigidae - Athene cunicularia
Animals - Birds	Athene cunicularia	burrowing owl	ABNSB10010	None	None	SSC	-	3712212	Davenport	Mapped and Unprocessed	Animals - Birds - Strigidae - Athene cunicularia
Animals - Birds	Contopus cooperi	olive-sided flycatcher	ABPAE32010	None	None	SSC	-	3712211	Felton	Unprocessed	Animals - Birds - Tyrannidae - Contopus cooperi
Animals - Birds	Contopus cooperi	olive-sided flycatcher	ABPAE32010	None	None	SSC	-	3612281	Santa Cruz	Unprocessed	Animals - Birds - Tyrannidae - Contopus cooperi
Animals - Birds	Contopus cooperi	olive-sided flycatcher	ABPAE32010	None	None	SSC	-	3712118	Laurel	Unprocessed	Animals - Birds - Tyrannidae - Contopus cooperi
Animals - Crustaceans	Stygobromus mackenziei	Mackenzie's Cave amphipod	ICMAL05530	None	None	-	-	3612281	Santa Cruz	Mapped	Animals - Crustaceans - Crangonyctidae - Stygobromus mackenziei
Animals - Crustaceans	Linderiella occidentalis	California linderiella	ICBRA06010	None	None	-	-	3612188	Soquel	Mapped	Animals - Crustaceans - Linderiellidae - Linderiella occidentalis
Animals - Fish	Gasterosteus aculeatus microcephalus	resident threespine stickleback	AFCPA03015	None	None	-	-	3612281	Santa Cruz	Unprocessed	Animals - Fish - Gasterosteidae - Gasterosteus aculeatus microcephalus
Animals - Fish	Eucyclogobius newberryi	tidewater goby	AFCQN04010	Endangered	None	SSC	-	3612281	Santa Cruz	Mapped and Unprocessed	Animals - Fish - Gobiidae - Eucyclogobius newberryi
Animals - Fish	Eucyclogobius newberryi	tidewater goby	AFCQN04010	Endangered	None	SSC	-	3612188	Soquel	Mapped and Unprocessed	Animals - Fish - Gobiidae - Eucyclogobius newberryi
Animals - Fish	Eucyclogobius newberryi	tidewater goby	AFCQN04010	Endangered	None	SSC	-	3712212	Davenport	Mapped and Unprocessed	Animals - Fish - Gobiidae - Eucyclogobius newberryi
Animals - Fish	Eucyclogobius newberryi	tidewater goby	AFCQN04010	Endangered	None	SSC	-	3712213	Ano Nuevo	Mapped and Unprocessed	Animals - Fish - Gobiidae - Eucyclogobius newberryi
Animals - Fish	Thaleichthys pacificus	eulachon	AFCHB04010	Threatened	None	-	-	3612188	Soquel	Mapped	Animals - Fish - Osmeridae - Thaleichthys pacificus
Animals - Fish	Oncorhynchus kisutch pop. 2	coho salmon - southern Oregon / northern California ESU	AFCHA02032	Threatened	Threatened	-	-	3612281	Santa Cruz	Unprocessed	Animals - Fish - Salmonidae - Oncorhynchus kisutch pop. 2
Animals - Fish	Oncorhynchus kisutch pop. 4	coho salmon - central California coast ESU	AFCHA02034	Endangered	Endangered	-	-	3612281	Santa Cruz	Mapped and Unprocessed	Animals - Fish - Salmonidae - Oncorhynchus kisutch pop. 4
Animals - Fish	Oncorhynchus kisutch pop. 4	coho salmon - central California coast ESU	AFCHA02034	Endangered	Endangered	-	-	3612188	Soquel	Unprocessed	Animals - Fish - Salmonidae - Oncorhynchus kisutch pop. 4
Animals - Fish	Oncorhynchus kisutch pop. 4	coho salmon - central California coast ESU	AFCHA02034	Endangered	Endangered	-	-	3712118	Laurel	Mapped and Unprocessed	Animals - Fish - Salmonidae - Oncorhynchus kisutch pop. 4
Animals - Fish	Oncorhynchus kisutch pop. 4	coho salmon - central California coast ESU	AFCHA02034	Endangered	Endangered	-	-	3712212	Davenport	Mapped and Unprocessed	Animals - Fish - Salmonidae - Oncorhynchus kisutch pop. 4

Animals - Fish	Oncorhynchus kisutch pop. 4	coho salmon - central California coast ESU	AFCHA02034	Endangered	Endangered	-	-	3712211	Felton	Mapped and Unprocessed	Animals - Fish - Salmonidae - Oncorhynchus kisutch pop. 4
Animals - Fish	Oncorhynchus kisutch pop. 4	coho salmon - central California coast ESU	AFCHA02034	Endangered	Endangered	-	-	3712213	Ano Nuevo	Mapped and Unprocessed	Animals - Fish - Salmonidae - Oncorhynchus kisutch pop. 4
Animals - Fish	Oncorhynchus mykiss irideus pop. 8	steelhead - central California coast DPS	AFCHA0209G	Threatened	None	-	-	3712213	Ano Nuevo	Mapped and Unprocessed	Animals - Fish - Salmonidae - Oncorhynchus mykiss irideus pop. 8
Animals - Fish	Oncorhynchus mykiss irideus pop. 8	steelhead - central California coast DPS	AFCHA0209G	Threatened	None	-	-	3712211	Felton	Mapped and Unprocessed	Animals - Fish - Salmonidae - Oncorhynchus mykiss irideus pop. 8
Animals - Fish	Oncorhynchus mykiss irideus pop. 8	steelhead - central California coast DPS	AFCHA0209G	Threatened	None	-	-	3712212	Davenport	Mapped and Unprocessed	Animals - Fish - Salmonidae - Oncorhynchus mykiss irideus pop. 8
Animals - Fish	Oncorhynchus mykiss irideus pop. 8	steelhead - central California coast DPS	AFCHA0209G	Threatened	None	-	-	3712118	Laurel	Mapped and Unprocessed	Animals - Fish - Salmonidae - Oncorhynchus mykiss irideus pop. 8
Animals - Fish	Oncorhynchus mykiss irideus pop. 8	steelhead - central California coast DPS	AFCHA0209G	Threatened	None	-	-	3612188	Soquel	Mapped and Unprocessed	Animals - Fish - Salmonidae - Oncorhynchus mykiss irideus pop. 8
Animals - Fish	Oncorhynchus mykiss irideus pop. 8	steelhead - central California coast DPS	AFCHA0209G	Threatened	None	-	-	3612281	Santa Cruz	Mapped and Unprocessed	Animals - Fish - Salmonidae - Oncorhynchus mykiss irideus pop. 8
Animals - Fish	Oncorhynchus mykiss irideus pop. 9	steelhead - south-central California coast DPS	AFCHA0209H	Threatened	None	-	-	3612188	Soquel	Unprocessed	Animals - Fish - Salmonidae - Oncorhynchus mykiss irideus pop. 9
Animals - Insects	Trimerotropis infantilis	Zayante band-winged grasshopper	IIORT36030	Endangered	None	-	-	3612188	Soquel	Mapped	Animals - Insects - Acrididae - Trimerotropis infantilis
Animals - Insects	Trimerotropis infantilis	Zayante band-winged grasshopper	IIORT36030	Endangered	None	-	-	3612281	Santa Cruz	Mapped	Animals - Insects - Acrididae - Trimerotropis infantilis
Animals - Insects	Trimerotropis infantilis	Zayante band-winged grasshopper	IIORT36030	Endangered	None	-	-	3712212	Davenport	Mapped and Unprocessed	Animals - Insects - Acrididae - Trimerotropis infantilis
Animals - Insects	Trimerotropis infantilis	Zayante band-winged grasshopper	IIORT36030	Endangered	None	-	-	3712211	Felton	Mapped and Unprocessed	Animals - Insects - Acrididae - Trimerotropis infantilis
Animals - Insects	Trimerotropis infantilis	Zayante band-winged grasshopper	IIORT36030	Endangered	None	-	-	3712118	Laurel	Mapped and Unprocessed	Animals - Insects - Acrididae - Trimerotropis infantilis
Animals - Insects	Bombus caliginosus	obscure bumble bee	IIHYM24380	None	None	-	-	3712211	Felton	Mapped	Animals - Insects - Apidae - Bombus caliginosus
Animals - Insects	Bombus caliginosus	obscure bumble bee	IIHYM24380	None	None	-	-	3712118	Laurel	Mapped	Animals - Insects - Apidae - Bombus caliginosus
Animals - Insects	Bombus caliginosus	obscure bumble bee	IIHYM24380	None	None	-	-	3612188	Soquel	Mapped	Animals - Insects - Apidae - Bombus caliginosus
Animals - Insects	Bombus occidentalis	western bumble bee	IIHYM24250	None	None	-	-	3612188	Soquel	Mapped and Unprocessed	Animals - Insects - Apidae - Bombus occidentalis

Animals - Insects	Bombus occidentalis	western bumble bee	IIHYM24250	None	None	-	-	3612281	Santa Cruz	Mapped and Unprocessed	Animals - Insects - Apidae - Bombus occidentalis
Animals - Insects	Bombus occidentalis	western bumble bee	IIHYM24250	None	None	-	-	3712211	Felton	Mapped and Unprocessed	Animals - Insects - Apidae - Bombus occidentalis
Animals - Insects	Bombus occidentalis	western bumble bee	IIHYM24250	None	None	-	-	3712212	Davenport	Mapped	Animals - Insects - Apidae - Bombus occidentalis
Animals - Insects	Bombus occidentalis	western bumble bee	IIHYM24250	None	None	-	-	3712213	Ano Nuevo	Mapped	Animals - Insects - Apidae - Bombus occidentalis
Animals - Insects	Cicindela hirticollis gravida	sandy beach tiger beetle	IICOL02101	None	None	-	-	3712213	Ano Nuevo	Mapped	Animals - Insects - Carabidae - Cicindela hirticollis gravida
Animals - Insects	Cicindela hirticollis gravida	sandy beach tiger beetle	IICOL02101	None	None	-	-	3612281	Santa Cruz	Mapped	Animals - Insects - Carabidae - Cicindela hirticollis gravida
Animals - Insects	Cicindela ohlone	Ohlone tiger beetle	IICOL026L0	Endangered	None	-	-	3612281	Santa Cruz	Mapped and Unprocessed	Animals - Insects - Carabidae - Cicindela ohlone
Animals - Insects	Cicindela ohlone	Ohlone tiger beetle	IICOL026L0	Endangered	None	-	-	3712118	Laurel	Mapped and Unprocessed	Animals - Insects - Carabidae - Cicindela ohlone
Animals - Insects	Cicindela ohlone	Ohlone tiger beetle	IICOL026L0	Endangered	None	-	-	3612188	Soquel	Mapped	Animals - Insects - Carabidae - Cicindela ohlone
Animals - Insects	Cicindela ohlone	Ohlone tiger beetle	IICOL026L0	Endangered	None	-	-	3712211	Felton	Mapped and Unprocessed	Animals - Insects - Carabidae - Cicindela ohlone
Animals - Insects	Adela oplerella	Opler's longhorn moth	IILEE0G040	None	None	-	-	3712211	Felton	Unprocessed	Animals - Insects - Incurvariidae - Adela oplerella
Animals - Insects	Adela oplerella	Opler's longhorn moth	IILEE0G040	None	None	-	-	3712118	Laurel	Mapped and Unprocessed	Animals - Insects - Incurvariidae - Adela oplerella
Animals - Insects	Euphilotes enoptes smithi	Smith's blue butterfly	IILEPG2026	Endangered	None	-	-	3712118	Laurel	Unprocessed	Animals - Insects - Lycaenidae - Euphilotes enoptes smithi
Animals - Insects	Euphilotes enoptes smithi	Smith's blue butterfly	IILEPG2026	Endangered	None	-	-	3712211	Felton	Mapped	Animals - Insects - Lycaenidae - Euphilotes enoptes smithi
Animals - Insects	Lytta moesta	moestan blister beetle	IICOL4C020	None	None	-	-	3612281	Santa Cruz	Mapped	Animals - Insects - Meloidae - Lytta moesta
Animals - Insects	Danaus plexippus pop. 1	monarch - California overwintering population	IILEPP2012	None	None	-	-	3612281	Santa Cruz	Mapped and Unprocessed	Animals - Insects - Nymphalidae - Danaus plexippus pop. 1
Animals - Insects	Danaus plexippus pop. 1	monarch - California overwintering population	IILEPP2012	None	None	-	-	3612188	Soquel	Mapped and Unprocessed	Animals - Insects - Nymphalidae - Danaus plexippus pop. 1
Animals - Insects	Danaus plexippus pop. 1	monarch - California overwintering population	IILEPP2012	None	None	-	-	3712212	Davenport	Mapped and Unprocessed	Animals - Insects - Nymphalidae - Danaus plexippus pop. 1
Animals - Insects	Polyphylla barbata	Mount Hermon (=barbate) June beetle	IICOL68030	Endangered	None	-	-	3712118	Laurel	Unprocessed	Animals - Insects - Scarabaeidae - Polyphylla barbata
Animals - Insects	Polyphylla barbata	Mount Hermon (=barbate) June beetle	IICOL68030	Endangered	None	-	-	3712212	Davenport	Unprocessed	Animals - Insects - Scarabaeidae - Polyphylla barbata
Animals - Insects	Polyphylla barbata	Mount Hermon (=barbate) June beetle	IICOL68030	Endangered	None	-	-	3712211	Felton	Mapped and Unprocessed	Animals - Insects - Scarabaeidae - Polyphylla barbata
Animals - Insects	Philanthus nasalis	Antioch specid wasp	IIHYM20010	None	None	-	-	3712211	Felton	Mapped	Animals - Insects - Sphecidae - Philanthus nasalis

Animals - Insects	Coelus globosus	globose dune beetle	IICOL4A010	None	None	-	-	3612281	Santa Cruz	Mapped	Animals - Insects - Tenebrionidae - Coelus globosus
Animals - Mammals	Dipodomys venustus venustus	Santa Cruz kangaroo rat	AMAFD03042	None	None	-	-	3612281	Santa Cruz	Mapped and Unprocessed	Animals - Mammals - Heteromyidae - Dipodomys venustus venustus
Animals - Mammals	Dipodomys venustus venustus	Santa Cruz kangaroo rat	AMAFD03042	None	None	-	-	3712118	Laurel	Mapped	Animals - Mammals - Heteromyidae - Dipodomys venustus venustus
Animals - Mammals	Dipodomys venustus venustus	Santa Cruz kangaroo rat	AMAFD03042	None	None	-	-	3712211	Felton	Mapped and Unprocessed	Animals - Mammals - Heteromyidae - Dipodomys venustus venustus
Animals - Mammals	Dipodomys venustus venustus	Santa Cruz kangaroo rat	AMAFD03042	None	None	-	-	3712212	Davenport	Mapped and Unprocessed	Animals - Mammals - Heteromyidae - Dipodomys venustus venustus
Animals - Mammals	Neotoma fuscipes annectens	San Francisco dusky-footed woodrat	AMAFF08082	None	None	SSC	-	3712212	Davenport	Mapped and Unprocessed	Animals - Mammals - Muridae - Neotoma fuscipes annectens
Animals - Mammals	Neotoma fuscipes annectens	San Francisco dusky-footed woodrat	AMAFF08082	None	None	SSC	-	3712211	Felton	Unprocessed	Animals - Mammals - Muridae - Neotoma fuscipes annectens
Animals - Mammals	Neotoma fuscipes annectens	San Francisco dusky-footed woodrat	AMAFF08082	None	None	SSC	-	3712118	Laurel	Mapped and Unprocessed	Animals - Mammals - Muridae - Neotoma fuscipes annectens
Animals - Mammals	Enhydra lutris nereis	southern sea otter	AMAJF09012	Threatened	None	FP	-	3612281	Santa Cruz	Unprocessed	Animals - Mammals - Mustelidae - Enhydra lutris nereis
Animals - Mammals	Enhydra lutris nereis	southern sea otter	AMAJF09012	Threatened	None	FP	-	3612188	Soquel	Unprocessed	Animals - Mammals - Mustelidae - Enhydra lutris nereis
Animals - Mammals	Enhydra lutris nereis	southern sea otter	AMAJF09012	Threatened	None	FP	-	3712212	Davenport	Unprocessed	Animals - Mammals - Mustelidae - Enhydra lutris nereis
Animals - Mammals	Enhydra lutris nereis	southern sea otter	AMAJF09012	Threatened	None	FP	-	3712213	Ano Nuevo	Unprocessed	Animals - Mammals - Mustelidae - Enhydra lutris nereis
Animals - Mammals	Taxidea taxus	American badger	AMAJF04010	None	None	SSC	-	3712212	Davenport	Unprocessed	Animals - Mammals - Mustelidae - Taxidea taxus
Animals - Mammals	Taxidea taxus	American badger	AMAJF04010	None	None	SSC	-	3712211	Felton	Mapped	Animals - Mammals - Mustelidae - Taxidea taxus
Animals - Mammals	Taxidea taxus	American badger	AMAJF04010	None	None	SSC	-	3612281	Santa Cruz	Mapped and Unprocessed	Animals - Mammals - Mustelidae - Taxidea taxus
Animals - Mammals	Eumetopias jubatus	Steller (=northern) sea-lion	AMAJC03010	Delisted	None	-	-	3712213	Ano Nuevo	Mapped and Unprocessed	Animals - Mammals - Otariidae - Eumetopias jubatus
Animals - Mammals	Antrozous pallidus	pallid bat	AMACC10010	None	None	SSC	-	3712118	Laurel	Mapped	Animals - Mammals - Vespertilionidae - Antrozous pallidus

Animals - Mammals	Antrozous pallidus	pallid bat	AMACC10010	None	None	SSC	-	3612188	Soquel	Mapped	Animals - Mammals - Vespertilionidae - Antrozous pallidus
Animals - Mammals	Corynorhinus townsendii	Townsend's big-eared bat	AMACC08010	None	None	SSC	-	3612188	Soquel	Mapped	Animals - Mammals - Vespertilionidae - Corynorhinus townsendii
Animals - Mammals	Corynorhinus townsendii	Townsend's big-eared bat	AMACC08010	None	None	SSC	-	3612281	Santa Cruz	Mapped	Animals - Mammals - Vespertilionidae - Corynorhinus townsendii
Animals - Mammals	Corynorhinus townsendii	Townsend's big-eared bat	AMACC08010	None	None	SSC	-	3712212	Davenport	Mapped	Animals - Mammals - Vespertilionidae - Corynorhinus townsendii
Animals - Mammals	Lasiurus blossevillii	western red bat	AMACC05060	None	None	SSC	-	3712118	Laurel	Unprocessed	Animals - Mammals - Vespertilionidae - Lasiurus blossevillii
Animals - Mammals	Lasiurus cinereus	hoary bat	AMACC05030	None	None	-	-	3712118	Laurel	Unprocessed	Animals - Mammals - Vespertilionidae - Lasiurus cinereus
Animals - Mammals	Lasiurus cinereus	hoary bat	AMACC05030	None	None	-	-	3612281	Santa Cruz	Mapped	Animals - Mammals - Vespertilionidae - Lasiurus cinereus
Animals - Mammals	Lasiurus cinereus	hoary bat	AMACC05030	None	None	-	-	3712211	Felton	Mapped	Animals - Mammals - Vespertilionidae - Lasiurus cinereus
Animals - Mammals	Myotis yumanensis	Yuma myotis	AMACC01020	None	None	-	-	3712118	Laurel	Unprocessed	Animals - Mammals - Vespertilionidae - Myotis yumanensis
Animals - Mollusks	Tryonia imitator	mimic tryonia (=California brackishwater snail)	IMGASJ7040	None	None	-	-	3612281	Santa Cruz	Mapped	Animals - Mollusks - Hydrobiidae - Tryonia imitator
Animals - Mollusks	Tryonia imitator	mimic tryonia (=California brackishwater snail)	IMGASJ7040	None	None	-	-	3612188	Soquel	Mapped	Animals - Mollusks - Hydrobiidae - Tryonia imitator
Animals - Mollusks	Margaritifera falcata	western pearlshell	IMBIV27020	None	None	-	-	3612281	Santa Cruz	Unprocessed	Animals - Mollusks - Margaritiferidae - Margaritifera falcata
Animals - Mollusks	Margaritifera falcata	western pearlshell	IMBIV27020	None	None	-	-	3712211	Felton	Mapped	Animals - Mollusks - Margaritiferidae - Margaritifera falcata
Animals - Mollusks	Margaritifera falcata	western pearlshell	IMBIV27020	None	None	-	-	3712213	Ano Nuevo	Mapped	Animals - Mollusks - Margaritiferidae - Margaritifera falcata
Animals - Mollusks	Anodonta oregonensis	Oregon floater	IMBIV04110	None	None	-	-	3712118	Laurel	Unprocessed	Animals - Mollusks - Unionidae - Anodonta oregonensis
Animals - Reptiles	Anniella pulchra	northern California legless lizard	ARACC01020	None	None	SSC	-	3612281	Santa Cruz	Unprocessed	Animals - Reptiles - Anniellidae - Anniella pulchra
Animals - Reptiles	Anniella pulchra	northern California legless lizard	ARACC01020	None	None	SSC	-	3612188	Soquel	Unprocessed	Animals - Reptiles - Anniellidae - Anniella pulchra
Animals - Reptiles	Emys marmorata	western pond turtle	ARAAD02030	None	None	SSC	-	3612188	Soquel	Mapped and Unprocessed	Animals - Reptiles - Emydidae - Emys marmorata
Animals - Reptiles	Emys marmorata	western pond turtle	ARAAD02030	None	None	SSC	-	3612281	Santa Cruz	Mapped and Unprocessed	Animals - Reptiles - Emydidae - Emys marmorata

Animals - Reptiles	Emys marmorata	western pond turtle	ARAAD02030	None	None	SSC	-	3712118	Laurel	Mapped and Unprocessed	Animals - Reptiles - Emydidae - Emys marmorata
Animals - Reptiles	Emys marmorata	western pond turtle	ARAAD02030	None	None	SSC	-	3712211	Felton	Mapped and Unprocessed	Animals - Reptiles - Emydidae - Emys marmorata
Animals - Reptiles	Emys marmorata	western pond turtle	ARAAD02030	None	None	SSC	-	3712212	Davenport	Unprocessed	Animals - Reptiles - Emydidae - Emys marmorata
Animals - Reptiles	Emys marmorata	western pond turtle	ARAAD02030	None	None	SSC	-	3712213	Ano Nuevo	Mapped and Unprocessed	Animals - Reptiles - Emydidae - Emys marmorata
Animals - Reptiles	Thamnophis sirtalis tetrataenia	San Francisco gartersnake	ARADB3613B	Endangered	Endangered	FP	-	3712213	Ano Nuevo	Mapped and Unprocessed	Animals - Reptiles - Natricidae - Thamnophis sirtalis tetrataenia
Community - Aquatic	North Central Coast Drainage Sacramento Sucker/Roach River	North Central Coast Drainage Sacramento Sucker/Roach River	CARA2623CA	None	None	-	-	3712212	Davenport	Mapped	Community - Aquatic - North Central Coast Drainage Sacramento Sucker/Roach River
Community - Aquatic	North Central Coast Drainage Sacramento Sucker/Roach River	North Central Coast Drainage Sacramento Sucker/Roach River	CARA2623CA	None	None	-	-	3712211	Felton	Mapped	Community - Aquatic - North Central Coast Drainage Sacramento Sucker/Roach River
Community - Aquatic	North Central Coast Drainage Sacramento Sucker/Roach River	North Central Coast Drainage Sacramento Sucker/Roach River	CARA2623CA	None	None	-	-	3712118	Laurel	Mapped	Community - Aquatic - North Central Coast Drainage Sacramento Sucker/Roach River
Community - Aquatic	North Central Coast Drainage Sacramento Sucker/Roach River	North Central Coast Drainage Sacramento Sucker/Roach River	CARA2623CA	None	None	-	-	3612281	Santa Cruz	Mapped	Community - Aquatic - North Central Coast Drainage Sacramento Sucker/Roach River
Community - Aquatic	North Central Coast Short-Run Coho Stream	North Central Coast Short-Run Coho Stream	CARA2632CA	None	None	-	-	3712212	Davenport	Mapped	Community - Aquatic - North Central Coast Short-Run Coho Stream
Community - Aquatic	North Central Coast Short-Run Coho Stream	North Central Coast Short-Run Coho Stream	CARA2632CA	None	None	-	-	3712213	Ano Nuevo	Mapped	Community - Aquatic - North Central Coast Short-Run Coho Stream
Community - Terrestrial	Coastal Brackish Marsh	Coastal Brackish Marsh	CTT52200CA	None	None	-	-	3712213	Ano Nuevo	Mapped	Community - Terrestrial - Coastal Brackish Marsh
Community - Terrestrial	Maritime Coast Range Ponderosa Pine Forest	Maritime Coast Range Ponderosa Pine Forest	CTT84132CA	None	None	-	-	3712212	Davenport	Mapped	Community - Terrestrial - Maritime Coast Range Ponderosa Pine Forest
Community - Terrestrial	Maritime Coast Range Ponderosa Pine Forest	Maritime Coast Range Ponderosa Pine Forest	CTT84132CA	None	None	-	-	3712211	Felton	Mapped	Community - Terrestrial - Maritime Coast Range Ponderosa Pine Forest
Community - Terrestrial	Monterey Pine Forest	Monterey Pine Forest	CTT83130CA	None	None	-	-	3712212	Davenport	Mapped	Community - Terrestrial - Monterey Pine Forest
Community - Terrestrial	Monterey Pine Forest	Monterey Pine Forest	CTT83130CA	None	None	-	-	3712213	Ano Nuevo	Mapped	Community - Terrestrial - Monterey Pine Forest

Community - Terrestrial	Northern Coastal Salt Marsh	Northern Coastal Salt Marsh	CTT52110CA	None	None	-	-	3712212	Davenport	Mapped	Community - Terrestrial - Northern Coastal Salt Marsh
Community - Terrestrial	Northern Interior Cypress Forest	Northern Interior Cypress Forest	CTT83220CA	None	None	-	-	3712212	Davenport	Mapped	Community - Terrestrial - Northern Interior Cypress Forest
Community - Terrestrial	Northern Maritime Chaparral	Northern Maritime Chaparral	CTT37C10CA	None	None	-	-	3712212	Davenport	Mapped	Community - Terrestrial - Northern Maritime Chaparral
Community - Terrestrial	Northern Maritime Chaparral	Northern Maritime Chaparral	CTT37C10CA	None	None	-	-	3712211	Felton	Mapped	Community - Terrestrial - Northern Maritime Chaparral
Community - Terrestrial	Northern Maritime Chaparral	Northern Maritime Chaparral	CTT37C10CA	None	None	-	-	3712118	Laurel	Mapped	Community - Terrestrial - Northern Maritime Chaparral
Plants - Bryophytes	Anomobryum julaceum	slender silver moss	NBMUS80010	None	None	-	4.2	3712211	Felton	Mapped	Plants - Bryophytes - Bryaceae - Anomobryum julaceum
Plants - Bryophytes	Anomobryum julaceum	slender silver moss	NBMUS80010	None	None	-	4.2	3712118	Laurel	Unprocessed	Plants - Bryophytes - Bryaceae - Anomobryum julaceum
Plants - Bryophytes	Fissidens pauperculus	minute pocket moss	NBMUS2W0U0	None	None	-	1B.2	3712118	Laurel	Mapped	Plants - Bryophytes - Fissidentaceae - Fissidens pauperculus
Plants - Bryophytes	Fissidens pauperculus	minute pocket moss	NBMUS2W0U0	None	None	-	1B.2	3712211	Felton	Mapped	Plants - Bryophytes - Fissidentaceae - Fissidens pauperculus
Plants - Bryophytes	Dacryophyllum falcifolium	tear drop moss	NBMUS8Z010	None	None	-	1B.3	3712211	Felton	Mapped	Plants - Bryophytes - Hypnaceae - Dacryophyllum falcifolium
Plants - Bryophytes	Dacryophyllum falcifolium	tear drop moss	NBMUS8Z010	None	None	-	1B.3	3612281	Santa Cruz	Mapped	Plants - Bryophytes - Hypnaceae - Dacryophyllum falcifolium
Plants - Bryophytes	Mielichhoferia elongata	elongate copper moss	NBMUS4Q022	None	None	-	4.3	3612281	Santa Cruz	Unprocessed	Plants - Bryophytes - Mielichhoferiaceae - Mielichhoferia elongata
Plants - Bryophytes	Mielichhoferia elongata	elongate copper moss	NBMUS4Q022	None	None	-	4.3	3712211	Felton	Unprocessed	Plants - Bryophytes - Mielichhoferiaceae - Mielichhoferia elongata
Plants - Bryophytes	Mielichhoferia elongata	elongate copper moss	NBMUS4Q022	None	None	-	4.3	3712212	Davenport	Mapped and Unprocessed	Plants - Bryophytes - Mielichhoferiaceae - Mielichhoferia elongata
Plants - Bryophytes	Mielichhoferia elongata	elongate copper moss	NBMUS4Q022	None	None	-	4.3	3712213	Ano Nuevo	Mapped and Unprocessed	Plants - Bryophytes - Mielichhoferiaceae - Mielichhoferia elongata
Plants - Vascular	Perideridia gairdneri ssp. gairdneri	California Gairdner's yampah	PDAPI1N062	None	None	-	4.2	3612281	Santa Cruz	Unprocessed	Plants - Vascular - Apiaceae - Perideridia gairdneri ssp. gairdneri
Plants - Vascular	Sanicula hoffmannii	Hoffmann's sanicle	PDAPI1Z090	None	None	-	4.3	3712212	Davenport	Unprocessed	Plants - Vascular - Apiaceae - Sanicula hoffmannii
Plants - Vascular	Sanicula hoffmannii	Hoffmann's sanicle	PDAPI1Z090	None	None	-	4.3	3712213	Ano Nuevo	Unprocessed	Plants - Vascular - Apiaceae - Sanicula hoffmannii

Plants - Vascular	Cirsium andrewsii	Franciscan thistle	PDAST2E050	None	None	-	1B.2	3712213	Ano Nuevo	Mapped	Plants - Vascular - Asteraceae - Cirsium andrewsii
Plants - Vascular	Holocarpha macradenia	Santa Cruz tarplant	PDAST4X020	Threatened	Endangered	-	1B.1	3712211	Felton	Mapped	Plants - Vascular - Asteraceae - Holocarpha macradenia
Plants - Vascular	Holocarpha macradenia	Santa Cruz tarplant	PDAST4X020	Threatened	Endangered	-	1B.1	3712118	Laurel	Mapped	Plants - Vascular - Asteraceae - Holocarpha macradenia
Plants - Vascular	Holocarpha macradenia	Santa Cruz tarplant	PDAST4X020	Threatened	Endangered	-	1B.1	3612281	Santa Cruz	Mapped	Plants - Vascular - Asteraceae - Holocarpha macradenia
Plants - Vascular	Holocarpha macradenia	Santa Cruz tarplant	PDAST4X020	Threatened	Endangered	-	1B.1	3612188	Soquel	Mapped and Unprocessed	Plants - Vascular - Asteraceae - Holocarpha macradenia
Plants - Vascular	Lasthenia californica ssp. macrantha	perennial goldfields	PDAST5L0C5	None	None	-	1B.2	3612188	Soquel	Mapped	Plants - Vascular - Asteraceae - Lasthenia californica ssp. macrantha
Plants - Vascular	Micropus amphibolus	Mt. Diablo cottonweed	PDAST6D030	None	None	-	3.2	3712118	Laurel	Unprocessed	Plants - Vascular - Asteraceae - Micropus amphibolus
Plants - Vascular	Micropus amphibolus	Mt. Diablo cottonweed	PDAST6D030	None	None	-	3.2	3712211	Felton	Unprocessed	Plants - Vascular - Asteraceae - Micropus amphibolus
Plants - Vascular	Microseris paludosa	marsh microseris	PDAST6E0D0	None	None	-	1B.2	3712211	Felton	Mapped and Unprocessed	Plants - Vascular - Asteraceae - Microseris paludosa
Plants - Vascular	Microseris paludosa	marsh microseris	PDAST6E0D0	None	None	-	1B.2	3712212	Davenport	Mapped	Plants - Vascular - Asteraceae - Microseris paludosa
Plants - Vascular	Microseris paludosa	marsh microseris	PDAST6E0D0	None	None	-	1B.2	3712213	Ano Nuevo	Mapped	Plants - Vascular - Asteraceae - Microseris paludosa
Plants - Vascular	Monolopia gracilens	woodland woollythreads	PDAST6G010	None	None	-	1B.2	3712211	Felton	Mapped	Plants - Vascular - Asteraceae - Monolopia gracilens
Plants - Vascular	Monolopia gracilens	woodland woollythreads	PDAST6G010	None	None	-	1B.2	3712118	Laurel	Mapped	Plants - Vascular - Asteraceae - Monolopia gracilens
Plants - Vascular	Monolopia gracilens	woodland woollythreads	PDAST6G010	None	None	-	1B.2	3612188	Soquel	Mapped	Plants - Vascular - Asteraceae - Monolopia gracilens
Plants - Vascular	Monolopia gracilens	woodland woollythreads	PDAST6G010	None	None	-	1B.2	3612281	Santa Cruz	Mapped	Plants - Vascular - Asteraceae - Monolopia gracilens
Plants - Vascular	Pentachaeta bellidiflora	white-rayed pentachaeta	PDAST6X030	Endangered	Endangered	-	1B.1	3612281	Santa Cruz	Mapped	Plants - Vascular - Asteraceae - Pentachaeta bellidiflora
Plants - Vascular	Pentachaeta bellidiflora	white-rayed pentachaeta	PDAST6X030	Endangered	Endangered	-	1B.1	3612188	Soquel	Mapped	Plants - Vascular - Asteraceae - Pentachaeta bellidiflora
Plants - Vascular	Pentachaeta bellidiflora	white-rayed pentachaeta	PDAST6X030	Endangered	Endangered	-	1B.1	3712118	Laurel	Mapped	Plants - Vascular - Asteraceae - Pentachaeta bellidiflora
Plants - Vascular	Pentachaeta bellidiflora	white-rayed pentachaeta	PDAST6X030	Endangered	Endangered	-	1B.1	3712211	Felton	Mapped	Plants - Vascular - Asteraceae - Pentachaeta bellidiflora

Plants - Vascular	Pentachaeta bellidiflora	white-rayed pentachaeta	PDAST6X030	Endangered	Endangered	-	1B.1	3712212	Davenport	Mapped	Plants - Vascular - Asteraceae - Pentachaeta bellidiflora
Plants - Vascular	Senecio aphanactis	chaparral ragwort	PDAST8H060	None	None	-	2B.2	3712212	Davenport	Mapped	Plants - Vascular - Asteraceae - Senecio aphanactis
Plants - Vascular	Senecio aphanactis	chaparral ragwort	PDAST8H060	None	None	-	2B.2	3712211	Felton	Mapped	Plants - Vascular - Asteraceae - Senecio aphanactis
Plants - Vascular	Stebbinsoseris decipiens	Santa Cruz microseris	PDAST6E050	None	None	-	1B.2	3712211	Felton	Mapped	Plants - Vascular - Asteraceae - Stebbinsoseris decipiens
Plants - Vascular	Stebbinsoseris decipiens	Santa Cruz microseris	PDAST6E050	None	None	-	1B.2	3712212	Davenport	Mapped	Plants - Vascular - Asteraceae - Stebbinsoseris decipiens
Plants - Vascular	Stebbinsoseris decipiens	Santa Cruz microseris	PDAST6E050	None	None	-	1B.2	3712213	Ano Nuevo	Mapped	Plants - Vascular - Asteraceae - Stebbinsoseris decipiens
Plants - Vascular	Amsinckia lunaris	bent-flowered fiddleneck	PDBOR01070	None	None	-	1B.2	3712213	Ano Nuevo	Mapped	Plants - Vascular - Boraginaceae - Amsinckia lunaris
Plants - Vascular	Amsinckia lunaris	bent-flowered fiddleneck	PDBOR01070	None	None	-	1B.2	3712212	Davenport	Mapped	Plants - Vascular - Boraginaceae - Amsinckia lunaris
Plants - Vascular	Amsinckia lunaris	bent-flowered fiddleneck	PDBOR01070	None	None	-	1B.2	3712118	Laurel	Mapped	Plants - Vascular - Boraginaceae - Amsinckia lunaris
Plants - Vascular	Plagiobothrys chorisianus var. chorisianus	Choris' popcornflower	PDBOR0V061	None	None	-	1B.2	3712118	Laurel	Mapped and Unprocessed	Plants - Vascular - Boraginaceae - Plagiobothrys chorisianus var. chorisianus
Plants - Vascular	Plagiobothrys chorisianus var. chorisianus	Choris' popcornflower	PDBOR0V061	None	None	-	1B.2	3712211	Felton	Mapped and Unprocessed	Plants - Vascular - Boraginaceae - Plagiobothrys chorisianus var. chorisianus
Plants - Vascular	Plagiobothrys chorisianus var. chorisianus	Choris' popcornflower	PDBOR0V061	None	None	-	1B.2	3712212	Davenport	Mapped	Plants - Vascular - Boraginaceae - Plagiobothrys chorisianus var. chorisianus
Plants - Vascular	Plagiobothrys chorisianus var. chorisianus	Choris' popcornflower	PDBOR0V061	None	None	-	1B.2	3712213	Ano Nuevo	Mapped	Plants - Vascular - Boraginaceae - Plagiobothrys chorisianus var. chorisianus
Plants - Vascular	Plagiobothrys chorisianus var. hickmanii	Hickman's popcornflower	PDBOR0V062	None	None	-	4.2	3712211	Felton	Unprocessed	Plants - Vascular - Boraginaceae - Plagiobothrys chorisianus var. hickmanii
Plants - Vascular	Plagiobothrys chorisianus var. hickmanii	Hickman's popcornflower	PDBOR0V062	None	None	-	4.2	3712118	Laurel	Unprocessed	Plants - Vascular - Boraginaceae - Plagiobothrys chorisianus var. hickmanii
Plants - Vascular	Plagiobothrys diffusus	San Francisco popcornflower	PDBOR0V080	None	Endangered	-	1B.1	3712118	Laurel	Mapped	Plants - Vascular - Boraginaceae - Plagiobothrys diffusus
Plants - Vascular	Plagiobothrys diffusus	San Francisco popcornflower	PDBOR0V080	None	Endangered	-	1B.1	3712211	Felton	Mapped	Plants - Vascular - Boraginaceae - Plagiobothrys diffusus
Plants - Vascular	Plagiobothrys diffusus	San Francisco popcornflower	PDBOR0V080	None	Endangered	-	1B.1	3712212	Davenport	Mapped	Plants - Vascular - Boraginaceae - Plagiobothrys diffusus

Plants - Vascular	Plagiobothrys diffusus	San Francisco popcornflower	PDBOR0V080	None	Endangered	-	1B.1	3612281	Santa Cruz	Mapped	Plants - Vascular - Boraginaceae - Plagiobothrys diffusus
Plants - Vascular	Plagiobothrys diffusus	San Francisco popcornflower	PDBOR0V080	None	Endangered	-	1B.1	3712213	Ano Nuevo	Mapped	Plants - Vascular - Boraginaceae - Plagiobothrys diffusus
Plants - Vascular	Arabis blepharophylla	coast rockcress	PDBRA06040	None	None	-	4.3	3712212	Davenport	Unprocessed	Plants - Vascular - Brassicaceae - Arabis blepharophylla
Plants - Vascular	Arabis blepharophylla	coast rockcress	PDBRA06040	None	None	-	4.3	3712211	Felton	Unprocessed	Plants - Vascular - Brassicaceae - Arabis blepharophylla
Plants - Vascular	Erysimum ammophilum	sand-loving wallflower	PDBRA16010	None	None	-	1B.2	3712213	Ano Nuevo	Mapped	Plants - Vascular - Brassicaceae - Erysimum ammophilum
Plants - Vascular	Erysimum franciscanum	San Francisco wallflower	PDBRA160A0	None	None	-	4.2	3712213	Ano Nuevo	Unprocessed	Plants - Vascular - Brassicaceae - Erysimum franciscanum
Plants - Vascular	Erysimum franciscanum	San Francisco wallflower	PDBRA160A0	None	None	-	4.2	3712212	Davenport	Unprocessed	Plants - Vascular - Brassicaceae - Erysimum franciscanum
Plants - Vascular	Erysimum franciscanum	San Francisco wallflower	PDBRA160A0	None	None	-	4.2	3612281	Santa Cruz	Unprocessed	Plants - Vascular - Brassicaceae - Erysimum franciscanum
Plants - Vascular	Erysimum teretifolium	Santa Cruz wallflower	PDBRA160N0	Endangered	Endangered	-	1B.1	3712212	Davenport	Mapped	Plants - Vascular - Brassicaceae - Erysimum teretifolium
Plants - Vascular	Erysimum teretifolium	Santa Cruz wallflower	PDBRA160N0	Endangered	Endangered	-	1B.1	3712211	Felton	Mapped	Plants - Vascular - Brassicaceae - Erysimum teretifolium
Plants - Vascular	Erysimum teretifolium	Santa Cruz wallflower	PDBRA160N0	Endangered	Endangered	-	1B.1	3712118	Laurel	Mapped	Plants - Vascular - Brassicaceae - Erysimum teretifolium
Plants - Vascular	Campanula californica	swamp harebell	PDCAM02060	None	None	-	1B.2	3712211	Felton	Mapped	Plants - Vascular - Campanulaceae - Campanula californica
Plants - Vascular	Arenaria paludicola	marsh sandwort	PDCAR040L0	Endangered	Endangered	-	1B.1	3712211	Felton	Mapped	Plants - Vascular - Caryophyllaceae - Arenaria paludicola
Plants - Vascular	Arenaria paludicola	marsh sandwort	PDCAR040L0	Endangered	Endangered	-	1B.1	3612281	Santa Cruz	Mapped	Plants - Vascular - Caryophyllaceae - Arenaria paludicola
Plants - Vascular	Silene verecunda ssp. verecunda	San Francisco campion	PDCAR0U213	None	None	-	1B.2	3712213	Ano Nuevo	Mapped	Plants - Vascular - Caryophyllaceae - Silene verecunda ssp. verecunda
Plants - Vascular	Hesperocyparis abramsiana var. abramsiana	Santa Cruz cypress	PGCUP04081	Threatened	Endangered	-	1B.2	3712212	Davenport	Mapped	Plants - Vascular - Cupressaceae - Hesperocyparis abramsiana var. abramsiana
Plants - Vascular	Hesperocyparis abramsiana var. abramsiana	Santa Cruz cypress	PGCUP04081	Threatened	Endangered	-	1B.2	3712211	Felton	Mapped	Plants - Vascular - Cupressaceae - Hesperocyparis abramsiana var. abramsiana
Plants - Vascular	Carex comosa	bristly sedge	PMCYP032Y0	None	None	-	2B.1	3712118	Laurel	Mapped	Plants - Vascular - Cyperaceae - Carex comosa
Plants - Vascular	Carex saliniformis	deceiving sedge	PMCYP03BY0	None	None	-	1B.2	3712211	Felton	Mapped	Plants - Vascular - Cyperaceae - Carex saliniformis

Plants - Vascular	Arctostaphylos andersonii	Anderson's manzanita	PDERI04030	None	None	-	1B.2	3712212	Davenport	Mapped	Plants - Vascular - Ericaceae - Arctostaphylos andersonii
Plants - Vascular	Arctostaphylos andersonii	Anderson's manzanita	PDERI04030	None	None	-	1B.2	3712118	Laurel	Mapped	Plants - Vascular - Ericaceae - Arctostaphylos andersonii
Plants - Vascular	Arctostaphylos andersonii	Anderson's manzanita	PDERI04030	None	None	-	1B.2	3712211	Felton	Mapped	Plants - Vascular - Ericaceae - Arctostaphylos andersonii
Plants - Vascular	Arctostaphylos andersonii	Anderson's manzanita	PDERI04030	None	None	-	1B.2	3612281	Santa Cruz	Mapped	Plants - Vascular - Ericaceae - Arctostaphylos andersonii
Plants - Vascular	Arctostaphylos andersonii	Anderson's manzanita	PDERI04030	None	None	-	1B.2	3612188	Soquel	Mapped	Plants - Vascular - Ericaceae - Arctostaphylos andersonii
Plants - Vascular	Arctostaphylos glutinosa	Schreiber's manzanita	PDERI040G0	None	None	-	1B.2	3712212	Davenport	Mapped	Plants - Vascular - Ericaceae - Arctostaphylos glutinosa
Plants - Vascular	Arctostaphylos glutinosa	Schreiber's manzanita	PDERI040G0	None	None	-	1B.2	3712213	Ano Nuevo	Mapped	Plants - Vascular - Ericaceae - Arctostaphylos glutinosa
Plants - Vascular	Arctostaphylos ohloneana	Ohlone manzanita	PDERI042Y0	None	None	-	1B.1	3712212	Davenport	Mapped and Unprocessed	Plants - Vascular - Ericaceae - Arctostaphylos ohloneana
Plants - Vascular	Arctostaphylos silvicola	Bonny Doon manzanita	PDERI041F0	None	None	-	1B.2	3712212	Davenport	Mapped and Unprocessed	Plants - Vascular - Ericaceae - Arctostaphylos silvicola
Plants - Vascular	Arctostaphylos silvicola	Bonny Doon manzanita	PDERI041F0	None	None	-	1B.2	3712211	Felton	Mapped and Unprocessed	Plants - Vascular - Ericaceae - Arctostaphylos silvicola
Plants - Vascular	Arctostaphylos silvicola	Bonny Doon manzanita	PDERI041F0	None	None	-	1B.2	3712118	Laurel	Mapped and Unprocessed	Plants - Vascular - Ericaceae - Arctostaphylos silvicola
Plants - Vascular	Hosackia gracilis	harlequin lotus	PDFAB2A0D0	None	None	-	4.2	3712211	Felton	Unprocessed	Plants - Vascular - Fabaceae - Hosackia gracilis
Plants - Vascular	Hosackia gracilis	harlequin lotus	PDFAB2A0D0	None	None	-	4.2	3612281	Santa Cruz	Unprocessed	Plants - Vascular - Fabaceae - Hosackia gracilis
Plants - Vascular	Hosackia gracilis	harlequin lotus	PDFAB2A0D0	None	None	-	4.2	3712212	Davenport	Unprocessed	Plants - Vascular - Fabaceae - Hosackia gracilis
Plants - Vascular	Hosackia gracilis	harlequin lotus	PDFAB2A0D0	None	None	-	4.2	3712213	Ano Nuevo	Unprocessed	Plants - Vascular - Fabaceae - Hosackia gracilis
Plants - Vascular	Trifolium buckwestiorum	Santa Cruz clover	PDFAB402W0	None	None	-	1B.1	3712212	Davenport	Mapped	Plants - Vascular - Fabaceae - Trifolium buckwestiorum
Plants - Vascular	Trifolium buckwestiorum	Santa Cruz clover	PDFAB402W0	None	None	-	1B.1	3612188	Soquel	Mapped	Plants - Vascular - Fabaceae - Trifolium buckwestiorum
Plants - Vascular	Trifolium buckwestiorum	Santa Cruz clover	PDFAB402W0	None	None	-	1B.1	3712118	Laurel	Unprocessed	Plants - Vascular - Fabaceae - Trifolium buckwestiorum
Plants - Vascular	Trifolium buckwestiorum	Santa Cruz clover	PDFAB402W0	None	None	-	1B.1	3712211	Felton	Mapped and Unprocessed	Plants - Vascular - Fabaceae - Trifolium buckwestiorum
Plants - Vascular	Trifolium polyodon	Pacific Grove clover	PDFAB402H0	None	Rare	-	1B.1	3712118	Laurel	Unprocessed	Plants - Vascular - Fabaceae - Trifolium polyodon

Plants - Vascular	Trifolium polyodon	Pacific Grove clover	PDFAB402H0	None	Rare	-	1B.1	3712211	Felton	Unprocessed	Plants - Vascular - Fabaceae - Trifolium polyodon
Plants - Vascular	Iris longipetala	coast iris	PMIRI092E0	None	None	-	4.2	3712211	Felton	Unprocessed	Plants - Vascular - Iridaceae - Iris longipetala
Plants - Vascular	Iris longipetala	coast iris	PMIRI092E0	None	None	-	4.2	3712213	Ano Nuevo	Unprocessed	Plants - Vascular - Iridaceae - Iris longipetala
Plants - Vascular	Monardella sinuata ssp. nigrescens	northern curly-leaved monardella	PDLAM18162	None	None	-	1B.2	3712211	Felton	Mapped	Plants - Vascular - Lamiaceae - Monardella sinuata ssp. nigrescens
Plants - Vascular	Monardella sinuata ssp. nigrescens	northern curly-leaved monardella	PDLAM18162	None	None	-	1B.2	3712118	Laurel	Mapped	Plants - Vascular - Lamiaceae - Monardella sinuata ssp. nigrescens
Plants - Vascular	Calochortus uniflorus	pink star-tulip	PMLIL0D1F0	None	None	-	4.2	3712211	Felton	Unprocessed	Plants - Vascular - Liliaceae - Calochortus uniflorus
Plants - Vascular	Fritillaria agrestis	stinkbells	PMLIL0V010	None	None	-	4.2	3712213	Ano Nuevo	Mapped	Plants - Vascular - Liliaceae - Fritillaria agrestis
Plants - Vascular	Malacothamnus arcuatus	arcuate bush-mallow	PDMAL0Q0E0	None	None	-	1B.2	3712118	Laurel	Mapped	Plants - Vascular - Malvaceae - Malacothamnus arcuatus
Plants - Vascular	Sidalcea malachroides	maple-leaved checkerbloom	PDMAL110E0	None	None	-	4.2	3712118	Laurel	Unprocessed	Plants - Vascular - Malvaceae - Sidalcea malachroides
Plants - Vascular	Sidalcea malachroides	maple-leaved checkerbloom	PDMAL110E0	None	None	-	4.2	3612188	Soquel	Unprocessed	Plants - Vascular - Malvaceae - Sidalcea malachroides
Plants - Vascular	Sidalcea malachroides	maple-leaved checkerbloom	PDMAL110E0	None	None	-	4.2	3612281	Santa Cruz	Mapped	Plants - Vascular - Malvaceae - Sidalcea malachroides
Plants - Vascular	Toxicoscordion fontanum	marsh zigadenus	PMLIL28050	None	None	-	4.2	3712211	Felton	Unprocessed	Plants - Vascular - Melanthiaceae - Toxicoscordion fontanum
Plants - Vascular	Calandrinia breweri	Brewer's calandrinia	PDPOR01020	None	None	-	4.2	3712118	Laurel	Unprocessed	Plants - Vascular - Montiaceae - Calandrinia breweri
Plants - Vascular	Calyptridium parryi var. hesseae	Santa Cruz Mountains pussypaws	PDPOR09052	None	None	-	1B.1	3712211	Felton	Mapped	Plants - Vascular - Montiaceae - Calyptridium parryi var. hesseae
Plants - Vascular	Calyptridium parryi var. hesseae	Santa Cruz Mountains pussypaws	PDPOR09052	None	None	-	1B.1	3712212	Davenport	Mapped and Unprocessed	Plants - Vascular - Montiaceae - Calyptridium parryi var. hesseae
Plants - Vascular	Cypripedium fasciculatum	clustered lady's-slipper	PMORC0Q060	None	None	-	4.2	3712118	Laurel	Unprocessed	Plants - Vascular - Orchidaceae - Cypripedium fasciculatum
Plants - Vascular	Cypripedium montanum	mountain lady's-slipper	PMORC0Q080	None	None	-	4.2	3712118	Laurel	Unprocessed	Plants - Vascular - Orchidaceae - Cypripedium montanum
Plants - Vascular	Cypripedium montanum	mountain lady's-slipper	PMORC0Q080	None	None	-	4.2	3712211	Felton	Unprocessed	Plants - Vascular - Orchidaceae - Cypripedium montanum
Plants - Vascular	Piperia candida	white-flowered rein orchid	PMORC1X050	None	None	-	1B.2	3712211	Felton	Mapped	Plants - Vascular - Orchidaceae - Piperia candida
Plants - Vascular	Piperia candida	white-flowered rein orchid	PMORC1X050	None	None	-	1B.2	3712212	Davenport	Mapped	Plants - Vascular - Orchidaceae - Piperia candida

Plants - Vascular	Castilleja ambigua var. ambigua	johnny-nip	PDSCR0D401	None	None	-	4.2	3612281	Santa Cruz	Unprocessed	Plants - Vascular - Orobanchaceae - Castilleja ambigua var. ambigua
Plants - Vascular	Pedicularis dudleyi	Dudley's lousewort	PDSCR1K0D0	None	Rare	-	1B.2	3612188	Soquel	Mapped	Plants - Vascular - Orobanchaceae - Pedicularis dudleyi
Plants - Vascular	Pedicularis dudleyi	Dudley's lousewort	PDSCR1K0D0	None	Rare	-	1B.2	3712211	Felton	Mapped	Plants - Vascular - Orobanchaceae - Pedicularis dudleyi
Plants - Vascular	Pedicularis dudleyi	Dudley's lousewort	PDSCR1K0D0	None	Rare	-	1B.2	3712212	Davenport	Mapped	Plants - Vascular - Orobanchaceae - Pedicularis dudleyi
Plants - Vascular	Eschscholzia hypecoides	San Benito poppy	PDPAP0A060	None	None	-	4.3	3712211	Felton	Unprocessed	Plants - Vascular - Papaveraceae - Eschscholzia hypecoides
Plants - Vascular	Mimulus rattanii ssp. decurtatus	Santa Cruz County monkeyflower	PDSCR1B2D2	None	None	-	4.2	3712211	Felton	Unprocessed	Plants - Vascular - Phrymaceae - Mimulus rattanii ssp. decurtatus
Plants - Vascular	Pinus radiata	Monterey pine	PGPIN040V0	None	None	-	1B.1	3712212	Davenport	Mapped	Plants - Vascular - Pinaceae - Pinus radiata
Plants - Vascular	Pinus radiata	Monterey pine	PGPIN040V0	None	None	-	1B.1	3712213	Ano Nuevo	Mapped	Plants - Vascular - Pinaceae - Pinus radiata
Plants - Vascular	Collinsia multicolor	San Francisco collinsia	PDSCR0H0B0	None	None	-	1B.2	3712213	Ano Nuevo	Mapped and Unprocessed	Plants - Vascular - Plantaginaceae - Collinsia multicolor
Plants - Vascular	Collinsia multicolor	San Francisco collinsia	PDSCR0H0B0	None	None	-	1B.2	3712212	Davenport	Mapped	Plants - Vascular - Plantaginaceae - Collinsia multicolor
Plants - Vascular	Collinsia multicolor	San Francisco collinsia	PDSCR0H0B0	None	None	-	1B.2	3612281	Santa Cruz	Mapped	Plants - Vascular - Plantaginaceae - Collinsia multicolor
Plants - Vascular	Penstemon rattanii var. kleei	Santa Cruz Mountains beardtongue	PDSCR1L5B1	None	None	-	1B.2	3712211	Felton	Mapped and Unprocessed	Plants - Vascular - Plantaginaceae - Penstemon rattanii var. kleei
Plants - Vascular	Penstemon rattanii var. kleei	Santa Cruz Mountains beardtongue	PDSCR1L5B1	None	None	-	1B.2	3712118	Laurel	Mapped	Plants - Vascular - Plantaginaceae - Penstemon rattanii var. kleei
Plants - Vascular	Penstemon rattanii var. kleei	Santa Cruz Mountains beardtongue	PDSCR1L5B1	None	None	-	1B.2	3712212	Davenport	Mapped	Plants - Vascular - Plantaginaceae - Penstemon rattanii var. kleei
Plants - Vascular	Agrostis blasdalei	Blasdale's bent grass	PMPOA04060	None	None	-	1B.2	3712212	Davenport	Mapped	Plants - Vascular - Poaceae - Agrostis blasdalei
Plants - Vascular	Agrostis blasdalei	Blasdale's bent grass	PMPOA04060	None	None	-	1B.2	3712213	Ano Nuevo	Mapped	Plants - Vascular - Poaceae - Agrostis blasdalei
Plants - Vascular	Agrostis blasdalei	Blasdale's bent grass	PMPOA04060	None	None	-	1B.2	3612281	Santa Cruz	Mapped	Plants - Vascular - Poaceae - Agrostis blasdalei
Plants - Vascular	Elymus californicus	California bottle-brush grass	PMPOA2H0W0	None	None	-	4.3	3612188	Soquel	Unprocessed	Plants - Vascular - Poaceae - Elymus californicus
Plants - Vascular	Elymus californicus	California bottle-brush grass	PMPOA2H0W0	None	None	-	4.3	3712118	Laurel	Unprocessed	Plants - Vascular - Poaceae - Elymus californicus
Plants - Vascular	Elymus californicus	California bottle-brush grass	PMPOA2H0W0	None	None	-	4.3	3712211	Felton	Unprocessed	Plants - Vascular - Poaceae - Elymus californicus
Plants - Vascular	Elymus californicus	California bottle-brush grass	PMPOA2H0W0	None	None	-	4.3	3712213	Ano Nuevo	Unprocessed	Plants - Vascular - Poaceae - Elymus californicus
Plants - Vascular	Elymus californicus	California bottle-brush grass	PMPOA2H0W0	None	None	-	4.3	3712212	Davenport	Unprocessed	Plants - Vascular - Poaceae - Elymus californicus

Plants - Vascular	Leptosiphon acicularis	bristly leptosiphon	PDPLM09010	None	None	-	4.2	3712212	Davenport	Unprocessed	Plants - Vascular - Polemoniaceae - Leptosiphon acicularis
Plants - Vascular	Leptosiphon acicularis	bristly leptosiphon	PDPLM09010	None	None	-	4.2	3712211	Felton	Unprocessed	Plants - Vascular - Polemoniaceae - Leptosiphon acicularis
Plants - Vascular	Leptosiphon grandiflorus	large-flowered leptosiphon	PDPLM090K0	None	None	-	4.2	3712118	Laurel	Unprocessed	Plants - Vascular - Polemoniaceae - Leptosiphon grandiflorus
Plants - Vascular	Leptosiphon grandiflorus	large-flowered leptosiphon	PDPLM090K0	None	None	-	4.2	3612188	Soquel	Unprocessed	Plants - Vascular - Polemoniaceae - Leptosiphon grandiflorus
Plants - Vascular	Leptosiphon grandiflorus	large-flowered leptosiphon	PDPLM090K0	None	None	-	4.2	3612281	Santa Cruz	Unprocessed	Plants - Vascular - Polemoniaceae - Leptosiphon grandiflorus
Plants - Vascular	Chorizanthe pungens var. hartwegiana	Ben Lomond spineflower	PDPGN040M1	Endangered	None	-	1B.1	3712118	Laurel	Mapped	Plants - Vascular - Polygonaceae - Chorizanthe pungens var. hartwegiana
Plants - Vascular	Chorizanthe pungens var. hartwegiana	Ben Lomond spineflower	PDPGN040M1	Endangered	None	-	1B.1	3712211	Felton	Mapped and Unprocessed	Plants - Vascular - Polygonaceae - Chorizanthe pungens var. hartwegiana
Plants - Vascular	Chorizanthe pungens var. hartwegiana	Ben Lomond spineflower	PDPGN040M1	Endangered	None	-	1B.1	3712212	Davenport	Mapped and Unprocessed	Plants - Vascular - Polygonaceae - Chorizanthe pungens var. hartwegiana
Plants - Vascular	Chorizanthe pungens var. pungens	Monterey spineflower	PDPGN040M2	Threatened	None	-	1B.2	3712118	Laurel	Mapped	Plants - Vascular - Polygonaceae - Chorizanthe pungens var. pungens
Plants - Vascular	Chorizanthe robusta var. hartwegii	Scotts Valley spineflower	PDPGN040Q1	Endangered	None	-	1B.1	3712118	Laurel	Mapped and Unprocessed	Plants - Vascular - Polygonaceae - Chorizanthe robusta var. hartwegii
Plants - Vascular	Chorizanthe robusta var. hartwegii	Scotts Valley spineflower	PDPGN040Q1	Endangered	None	-	1B.1	3712211	Felton	Mapped and Unprocessed	Plants - Vascular - Polygonaceae - Chorizanthe robusta var. hartwegii
Plants - Vascular	Chorizanthe robusta var. robusta	robust spineflower	PDPGN040Q2	Endangered	None	-	1B.1	3712211	Felton	Mapped	Plants - Vascular - Polygonaceae - Chorizanthe robusta var. robusta
Plants - Vascular	Chorizanthe robusta var. robusta	robust spineflower	PDPGN040Q2	Endangered	None	-	1B.1	3712118	Laurel	Mapped	Plants - Vascular - Polygonaceae - Chorizanthe robusta var. robusta
Plants - Vascular	Chorizanthe robusta var. robusta	robust spineflower	PDPGN040Q2	Endangered	None	-	1B.1	3612281	Santa Cruz	Mapped	Plants - Vascular - Polygonaceae - Chorizanthe robusta var. robusta
Plants - Vascular	Chorizanthe robusta var. robusta	robust spineflower	PDPGN040Q2	Endangered	None	-	1B.1	3612188	Soquel	Mapped	Plants - Vascular - Polygonaceae - Chorizanthe robusta var. robusta
Plants - Vascular	Eriogonum nudum var. decurrens	Ben Lomond buckwheat	PDPGN08492	None	None	-	1B.1	3712118	Laurel	Mapped	Plants - Vascular - Polygonaceae - Eriogonum nudum var. decurrens
Plants - Vascular	Eriogonum nudum var. decurrens	Ben Lomond buckwheat	PDPGN08492	None	None	-	1B.1	3712211	Felton	Mapped	Plants - Vascular - Polygonaceae - Eriogonum nudum var. decurrens

Plants - Vascular	Eriogonum nudum var. decurrens	Ben Lomond buckwheat	PDPGN08492	None	None	-	1B.1	3712212	Davenport	Mapped	Plants - Vascular - Polygonaceae - Eriogonum nudum var. decurrens
Plants - Vascular	Polygonum hickmanii	Scotts Valley polygonum	PDPGN0L310	Endangered	Endangered	-	1B.1	3712211	Felton	Mapped	Plants - Vascular - Polygonaceae - Polygonum hickmanii
Plants - Vascular	Polygonum hickmanii	Scotts Valley polygonum	PDPGN0L310	Endangered	Endangered	-	1B.1	3712118	Laurel	Mapped	Plants - Vascular - Polygonaceae - Polygonum hickmanii
Plants - Vascular	Stuckenia filiformis ssp. alpina	slender-leaved pondweed	PMPOT03091	None	None	-	2B.2	3712213	Ano Nuevo	Mapped	Plants - Vascular - Potamogetonaceae - Stuckenia filiformis ssp. alpina
Plants - Vascular	Ranunculus lobbii	Lobb's aquatic buttercup	PDRAN0L1J0	None	None	-	4.2	3712118	Laurel	Unprocessed	Plants - Vascular - Ranunculaceae - Ranunculus lobbii
Plants - Vascular	Horkelia cuneata var. sericea	Kellogg's horkelia	PDROS0W043	None	None	-	1B.1	3712118	Laurel	Mapped	Plants - Vascular - Rosaceae - Horkelia cuneata var. sericea
Plants - Vascular	Horkelia cuneata var. sericea	Kellogg's horkelia	PDROS0W043	None	None	-	1B.1	3712211	Felton	Mapped	Plants - Vascular - Rosaceae - Horkelia cuneata var. sericea
Plants - Vascular	Horkelia cuneata var. sericea	Kellogg's horkelia	PDROS0W043	None	None	-	1B.1	3612281	Santa Cruz	Mapped	Plants - Vascular - Rosaceae - Horkelia cuneata var. sericea
Plants - Vascular	Horkelia cuneata var. sericea	Kellogg's horkelia	PDROS0W043	None	None	-	1B.1	3712213	Ano Nuevo	Mapped	Plants - Vascular - Rosaceae - Horkelia cuneata var. sericea
Plants - Vascular	Horkelia cuneata var. sericea	Kellogg's horkelia	PDROS0W043	None	None	-	1B.1	3712212	Davenport	Mapped	Plants - Vascular - Rosaceae - Horkelia cuneata var. sericea
Plants - Vascular	Horkelia marinensis	Point Reyes horkelia	PDROS0W0B0	None	None	-	1B.2	3712212	Davenport	Mapped and Unprocessed	Plants - Vascular - Rosaceae - Horkelia marinensis
Plants - Vascular	Horkelia marinensis	Point Reyes horkelia	PDROS0W0B0	None	None	-	1B.2	3712213	Ano Nuevo	Mapped	Plants - Vascular - Rosaceae - Horkelia marinensis
Plants - Vascular	Horkelia marinensis	Point Reyes horkelia	PDROS0W0B0	None	None	-	1B.2	3612281	Santa Cruz	Mapped	Plants - Vascular - Rosaceae - Horkelia marinensis
Plants - Vascular	Horkelia marinensis	Point Reyes horkelia	PDROS0W0B0	None	None	-	1B.2	3712211	Felton	Mapped and Unprocessed	Plants - Vascular - Rosaceae - Horkelia marinensis
Plants - Vascular	Rosa pinetorum	pine rose	PDROS1J0W0	None	None	-	1B.2	3712213	Ano Nuevo	Mapped	Plants - Vascular - Rosaceae - Rosa pinetorum

CNPS California Native Plant Society

Plant List

Inventory of Rare and Endangered Plants

58 matches found. *Click on scientific name for details*

Search Criteria

Found in Quads 3712212, 3712211, 3712118 3612281 and 3612188;

Modify Search Criteria | Export to Excel | Modify Columns | Modify Sort | Display Photos

Scientific Name	Common Name	Family	Lifeform	Blooming Period	CA Rare Plant Rank	State Rank	Global Rank
Agrostis blasdalei	Blasdale's bent grass	Poaceae	perennial rhizomatous herb	May-Jul	1B.2	S2	G2
Amsinckia lunaris	bent-flowered fiddleneck	Boraginaceae	annual herb	Mar-Jun	1B.2	S3	G3
Anomobryum julaceum	slender silver moss	Bryaceae	moss		4.2	S2	G5?
Arabis blepharophylla	coast rockcress	Brassicaceae	perennial herb	Feb-May	4.3	S4	G4
Arctostaphylos andersonii	Anderson's manzanita	Ericaceae	perennial evergreen shrub	Nov-May	1B.2	S2	G2
Arctostaphylos glutinosa	Schreiber's manzanita	Ericaceae	perennial evergreen shrub	(Nov)Mar-Apr	1B.2	S1	G1
Arctostaphylos ohloneana	Ohlone manzanita	Ericaceae	evergreen shrub	Feb-Mar	1B.1	S1	G1
Arctostaphylos pajaroensis	Pajaro manzanita	Ericaceae	perennial evergreen shrub	Dec-Mar	1B.1	S1	G1
Arctostaphylos silvicola	Bonny Doon manzanita	Ericaceae	perennial evergreen shrub	Jan-Mar	1B.2	S1	G1
Arenaria paludicola	marsh sandwort	Caryophyllaceae	perennial stoloniferous herb	May-Aug	1B.1	S1	G1
Calandrinia breweri	Brewer's calandrinia	Montiaceae	annual herb	(Jan)Mar-Jun	4.2	S4	G4
Calyptridium parryi var. hesseae	Santa Cruz Mountains pussypaws	Montiaceae	annual herb	May-Aug	1B.1	S2	G3G4T2
Campanula californica	swamp harebell	Campanulaceae	perennial rhizomatous herb	Jun-Oct	1B.2	S3	G3
Carex comosa	bristly sedge	Cyperaceae	perennial rhizomatous herb	May-Sep	2B.1	S2	G5
Carex saliniformis	deceiving sedge	Cyperaceae	perennial rhizomatous herb	Jun(Jul)	1B.2	S2	G2
	johnny-nip	Orobanchaceae	annual herb	Mar-Aug	4.2	S4	G4T5

Castilleja ambigua var. ambigua			(hemiparasitic)				
Chorizanthe pungens var. hartwegiana	Ben Lomond spineflower	Polygonaceae	annual herb	Apr-Jul	1B.1	S1	G2T1
Chorizanthe pungens var. pungens	Monterey spineflower	Polygonaceae	annual herb	Apr-Jun(Jul-Aug)	1B.2	S2	G2T2
Chorizanthe robusta var. hartwegii	Scotts Valley spineflower	Polygonaceae	annual herb	Apr-Jul	1B.1	S1	G2T1
Chorizanthe robusta var. robusta	robust spineflower	Polygonaceae	annual herb	Apr-Sep	1B.1	S1	G2T1
Collinsia multicolor	San Francisco collinsia	Plantaginaceae	annual herb	(Feb)Mar-May	1B.2	S2	G2
Cypripedium fasciculatum	clustered lady's-slipper	Orchidaceae	perennial rhizomatous herb	Mar-Aug	4.2	S4	G4
Cypripedium montanum	mountain lady's-slipper	Orchidaceae	perennial rhizomatous herb	Mar-Aug	4.2	S4	G4
Dacryophyllum falcifolium	tear drop moss	Hypnaceae	moss		1B.3	S2	G2
Elymus californicus	California bottle-brush grass	Poaceae	perennial herb	May-Aug(Nov)	4.3	S4	G4
Eriogonum nudum var. decurrens	Ben Lomond buckwheat	Polygonaceae	perennial herb	Jun-Oct	1B.1	S1	G5T1
Erysimum teretifolium	Santa Cruz wallflower	Brassicaceae	perennial herb	Mar-Jul	1B.1	S1	G1
Fissidens pauperculus	minute pocket moss	Fissidentaceae	moss		1B.2	S2	G3?
Grindelia hirsutula var. maritima	San Francisco gumplant	Asteraceae	perennial herb	Jun-Sep	3.2	S1	G5T1Q
Hesperocyparis abramsiana var. abramsiana	Santa Cruz cypress	Cupressaceae	perennial evergreen tree		1B.2	S1	G1T1
Hoita strobilina	Loma Prieta hoita	Fabaceae	perennial herb	May-Jul(Aug-Oct)	1B.1	S2?	G2?
Holocarpha macradenia	Santa Cruz tarplant	Asteraceae	annual herb	Jun-Oct	1B.1	S1	G1
Horkelia cuneata var. sericea	Kellogg's horkelia	Rosaceae	perennial herb	Apr-Sep	1B.1	S1?	G4T1?
Horkelia marinensis	Point Reyes horkelia	Rosaceae	perennial herb	May-Sep	1B.2	S2	G2
Lasthenia californica ssp. macrantha	perennial goldfields	Asteraceae	perennial herb	Jan-Nov	1B.2	S2	G3T2
Lessingia micradenia var. glabrata	smooth lessingia	Asteraceae	annual herb	(Apr-Jun)Jul-Nov	1B.2	S2	G2T2
Malacothamnus arcuatus	arcuate bush-mallow	Malvaceae	perennial evergreen shrub	Apr-Sep	1B.2	S2	G2Q
Micropus amphibolus	Mt. Diablo cottonweed	Asteraceae	annual herb	Mar-May	3.2	S3S4	G3G4
Microseris paludosa	marsh microseris	Asteraceae	perennial herb	Apr-Jun(Jul)	1B.2	S2	G2
Mielichhoferia elongata	elongate copper moss	Mielichhoferiaceae	moss		4.3	S4	G5
Mimulus rattanii ssp. decurtatus	Santa Cruz County monkeyflower	Phrymaceae	annual herb	May-Jul	4.2	S1S3	G4T1T3Q

Monardella sinuata ssp. nigrescens	northern curly-leaved monardella	Lamiaceae	annual herb	(Apr)May-Jul(Aug-Sep)	1B.2	S2	G3T2
Monolopia gracilens	woodland woolythreads	Asteraceae	annual herb	(Feb)Mar-Jul	1B.2	S3	G3
Pedicularis dudleyi	Dudley's lousewort	Orobanchaceae	perennial herb	Apr-Jun	1B.2	S2	G2
Penstemon rattanii var. kleei	Santa Cruz Mountains beardtongue	Plantaginaceae	perennial herb	May-Jun	1B.2	S2	G4T2
Pentachaeta bellidiflora	white-rayed pentachaeta	Asteraceae	annual herb	Mar-May	1B.1	S1	G1
Pinus radiata	Monterey pine	Pinaceae	perennial evergreen tree		1B.1	S1	G1
Piperia candida	white-flowered rein orchid	Orchidaceae	perennial herb	(Mar)May-Sep	1B.2	S3	G3
Plagiobothrys chorisianus var. chorisianus	Choris' popcornflower	Boraginaceae	annual herb	Mar-Jun	1B.2	S1	G3T1Q
Plagiobothrys diffusus	San Francisco popcornflower	Boraginaceae	annual herb	Mar-Jun	1B.1	S1	G1Q
Polygonum hickmanii	Scotts Valley polygonum	Polygonaceae	annual herb	May-Aug	1B.1	S1	G1
Ranunculus lobbii	Lobb's aquatic buttercup	Ranunculaceae	annual herb (aquatic)	Feb-May	4.2	S3	G4
Sanicula hoffmannii	Hoffmann's sanicle	Apiaceae	perennial herb	Mar-May	4.3	S3	G3
Senecio aphanactis	chaparral ragwort	Asteraceae	annual herb	Jan-Apr(May)	2B.2	S2	G3
Sidalcea malachroides	maple-leaved checkerbloom	Malvaceae	perennial herb	(Mar)Apr-Aug	4.2	S3	G3
Silene verecunda ssp. verecunda	San Francisco campion	Caryophyllaceae	perennial herb	(Feb)Mar-Jun(Aug)	1B.2	S1	G5T1
Stebbinsoseris decipiens	Santa Cruz microseris	Asteraceae	annual herb	Apr-May	1B.2	S2	G2
Trifolium buckwestiorum	Santa Cruz clover	Fabaceae	annual herb	Apr-Oct	1B.1	S2	G2

Suggested Citation

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Questions and Comments
rareplants@cnps.org

Quad Name **Santa Cruz (digital)**
Quad Number **36122-H1**

ESA Anadromous Fish

SONCC Coho ESU (T) -
CCC Coho ESU (E) - **X**
CC Chinook Salmon ESU (T) -
CVSR Chinook Salmon ESU (T) -
SRWR Chinook Salmon ESU (E) -
NC Steelhead DPS (T) -
CCC Steelhead DPS (T) - **X**
SCCC Steelhead DPS (T) -
SC Steelhead DPS (E) -
CCV Steelhead DPS (T) -
Eulachon (T) -
sDPS Green Sturgeon (T) - **X**

ESA Anadromous Fish Critical Habitat

SONCC Coho Critical Habitat -
CCC Coho Critical Habitat - **X**
CC Chinook Salmon Critical Habitat -
CVSR Chinook Salmon Critical Habitat -
SRWR Chinook Salmon Critical Habitat -
NC Steelhead Critical Habitat -
CCC Steelhead Critical Habitat - **X**
SCCC Steelhead Critical Habitat -
SC Steelhead Critical Habitat -
CCV Steelhead Critical Habitat -
Eulachon Critical Habitat -
sDPS Green Sturgeon Critical Habitat - **X**

ESA Marine Invertebrates

Range Black Abalone (E) - **X**
Range White Abalone (E) -

ESA Marine Invertebrates Critical Habitat

Black Abalone Critical Habitat - **X**

ESA Sea Turtles

East Pacific Green Sea Turtle (T) - **X**
Olive Ridley Sea Turtle (T/E) - **X**
Leatherback Sea Turtle (E) - **X**
North Pacific Loggerhead Sea Turtle (E) - **X**

ESA Whales

Blue Whale (E) - **X**
Fin Whale (E) - **X**
Humpback Whale (E) - **X**
Southern Resident Killer Whale (E) - **X**
North Pacific Right Whale (E) - **X**
Sei Whale (E) - **X**
Sperm Whale (E) - **X**

ESA Pinnipeds

Guadalupe Fur Seal (T) - **X**
Steller Sea Lion Critical Habitat -

Essential Fish Habitat

Coho EFH - **X**
Chinook Salmon EFH -
Groundfish EFH - **X**
Coastal Pelagics EFH - **X**
Highly Migratory Species EFH - **X**

MMPA Species (See list at left)

ESA and MMPA Cetaceans/Pinnipeds

See list at left and consult the NMFS Long Beach office 562-980-4000

MMPA Cetaceans - **X**

MMPA Pinnipeds - **X**

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Ventura Fish And Wildlife Office
2493 Portola Road, Suite B
Ventura, CA 93003-7726
Phone: (805) 644-1766 Fax: (805) 644-3958

In Reply Refer To:
Consultation Code: 08EVEN00-2019-SLI-0423
Event Code: 08EVEN00-2019-E-00945
Project Name: Coast Pump Station

April 04, 2019

Subject: List of threatened and endangered species that may occur in your proposed project location, and/or may be affected by your proposed project

To Whom It May Concern:

The enclosed list identifies species listed as threatened and endangered, species proposed for listing as threatened or endangered, designated and proposed critical habitat, and species that are candidates for listing that may occur within the boundary of the area you have indicated using the U.S. Fish and Wildlife Service's (Service) Information Planning and Conservation System (IPaC). The species list fulfills the requirements under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 et seq.). Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the species list should be verified after 90 days. We recommend that verification be completed by visiting the IPaC website at regular intervals during project planning and implementation for updates to species lists following the same process you used to receive the enclosed list. Please include the Consultation Tracking Number in the header of this letter with any correspondence about the species list.

Due to staff shortages and excessive workload, we are unable to provide an official list more specific to your area. Numerous other sources of information are available for you to narrow the list to the habitats and conditions of the site in which you are interested. For example, we recommend conducting a biological site assessment or surveys for plants and animals that could help refine the list.

If a Federal agency is involved in the project, that agency has the responsibility to review its proposed activities and determine whether any listed species may be affected. If the project is a major construction project*, the Federal agency has the responsibility to prepare a biological assessment to make a determination of the effects of the action on the listed species or critical habitat. If the Federal agency determines that a listed species or critical habitat is likely to be adversely affected, it should request, in writing through our office, formal consultation pursuant to section 7 of the Act. Informal consultation may be used to exchange information and resolve conflicts with respect to threatened or endangered species or their critical habitat prior to a

written request for formal consultation. During this review process, the Federal agency may engage in planning efforts but may not make any irreversible commitment of resources. Such a commitment could constitute a violation of section 7(d) of the Act.

Federal agencies are required to confer with the Service, pursuant to section 7(a)(4) of the Act, when an agency action is likely to jeopardize the continued existence of any proposed species or result in the destruction or adverse modification of proposed critical habitat (50 CFR 402.10(a)). A request for formal conference must be in writing and should include the same information that would be provided for a request for formal consultation. Conferences can also include discussions between the Service and the Federal agency to identify and resolve potential conflicts between an action and proposed species or proposed critical habitat early in the decision-making process. The Service recommends ways to minimize or avoid adverse effects of the action. These recommendations are advisory because the jeopardy prohibition of section 7(a)(2) of the Act does not apply until the species is listed or the proposed critical habitat is designated. The conference process fulfills the need to inform Federal agencies of possible steps that an agency might take at an early stage to adjust its actions to avoid jeopardizing a proposed species.

When a proposed species or proposed critical habitat may be affected by an action, the lead Federal agency may elect to enter into formal conference with the Service even if the action is not likely to jeopardize or result in the destruction or adverse modification of proposed critical habitat. If the proposed species is listed or the proposed critical habitat is designated after completion of the conference, the Federal agency may ask the Service, in writing, to confirm the conference as a formal consultation. If the Service reviews the proposed action and finds that no significant changes in the action as planned or in the information used during the conference have occurred, the Service will confirm the conference as a formal consultation on the project and no further section 7 consultation will be necessary. Use of the formal conference process in this manner can prevent delays in the event the proposed species is listed or the proposed critical habitat is designated during project development or implementation.

Candidate species are those species presently under review by the Service for consideration for Federal listing. Candidate species should be considered in the planning process because they may become listed or proposed for listing prior to project completion. Preparation of a biological assessment, as described in section 7(c) of the Act, is not required for candidate species. If early evaluation of your project indicates that it is likely to affect a candidate species, you may wish to request technical assistance from this office.

Only listed species receive protection under the Act. However, sensitive species should be considered in the planning process in the event they become listed or proposed for listing prior to project completion. We recommend that you review information in the California Department of Fish and Wildlife's Natural Diversity Data Base. You can contact the California Department of Fish and Wildlife at (916) 324-3812 for information on other sensitive species that may occur in this area.

[*A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.]

Attachment(s):

- Official Species List

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Ventura Fish And Wildlife Office
2493 Portola Road, Suite B
Ventura, CA 93003-7726
(805) 644-1766

Project Summary

Consultation Code: 08EVEN00-2019-SLI-0423

Event Code: 08EVEN00-2019-E-00945

Project Name: Coast Pump Station

Project Type: WATER SUPPLY / DELIVERY

Project Description: Water pipeline replacement.

Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/place/36.99088089361749N122.03162417141293W

Counties: Santa Cruz, CA

Endangered Species Act Species

There is a total of 15 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

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1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Birds

NAME	STATUS
California Least Tern *Sterna antillarum browni* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/8104	Endangered
Least Bell's Vireo *Vireo bellii pusillus* There is **final** critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/5945	Endangered
Marbled Murrelet *Brachyramphus marmoratus* Population: U.S.A. (CA, OR, WA) There is **final** critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/4467	Threatened
Southwestern Willow Flycatcher *Empidonax traillii extimus* There is **final** critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/6749	Endangered
Western Snowy Plover *Charadrius nivosus nivosus* Population: Pacific Coast population DPS-U.S.A. (CA, OR, WA), Mexico (within 50 miles of Pacific coast) There is **final** critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/8035	Threatened

Reptiles

NAME	STATUS
San Francisco Garter Snake *Thamnophis sirtalis tetrataenia* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/5956	Endangered

Amphibians

NAME	STATUS
California Red-legged Frog *Rana draytonii* There is **final** critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/2891	Threatened
California Tiger Salamander *Ambystoma californiense* Population: U.S.A. (Central CA DPS) There is **final** critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/2076	Threatened

Fishes

NAME	STATUS
Tidewater Goby *Eucyclogobius newberryi* There is **final** critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/57	Endangered

Insects

NAME	STATUS
Ohlone Tiger Beetle *Cicindela ohlone* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/8271	Endangered
Zayante Band-winged Grasshopper *Trimerotropis infantilis* There is **final** critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/1036	Endangered

Flowering Plants

NAME	STATUS
Marsh Sandwort *Arenaria paludicola* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/2229	Endangered
Santa Cruz Tarplant *Holocarpha macradenia* There is **final** critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/6832	Threatened
Scotts Valley Polygonum *Polygonum hickmanii* There is **final** critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/3222	Endangered
Scotts Valley Spineflower *Chorizanthe robusta var. hartwegii* There is **final** critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/7108	Endangered

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

Scientific Name	Common Name	USFWS	CDFW	CRPR	Habitat Characteristics	Impacts Analyzed	Rationale
Agrostis blasdalei	Blasdale's bent grass	None	None	1B.2	Perennial rhizomatous herb. Species prefers coastal bluff scrub, coastal dunes, and coastal prairie; 0–490 ft. Bloom period: May–Jul.	N	Suitable habitat not present.
Amsinckia lunaris	bent-flowered fiddleneck	None	None	1B.2	Annual herb. Species prefers coastal bluff scrub, cismontane woodland, and grasslands; 5–1,640 ft. Bloom period: Mar–Jun.	N	Annual grassland provides suitable habitat in theory; however, both parcels are highly disturbed and subject to ongoing management by the City, including twice annual weed abatement by string trimmer, likely precluding the presence of this species.
Arctostaphylos andersonii	Anderson's manzanita	None	None	1B.2	Evergreen shrub. Species common in openings and edges of chaparral and broadleafed upland and north coast coniferous forests; 195–2,495 ft. Bloom period: Nov–May.	N	Suitable edge habitat may be present; however, area is below elevation range and all CNDDB occurrences are shown in the surrounding hills, not in the low river valley (CDFW 2019).
Arctostaphylos glutinosa	Schreiber's manzanita	None	None	1B.2	Perennial evergreen shrub. Species prefers diatomaceous shale, chaparral, and closed-cone coniferous forests; 557-2,230 ft. Bloom period: Nov (Mar-Apr).	N	Suitable habitat not present. Proposed project area below known species elevation range.
Arctostaphylos ohloneana	Ohlone manzanita	None	None	1B.1	Evergreen shrub. Known to prefer siliceous shale, coastal scrub, and closed-cone coniferous forests; 1,476-1,738 ft. Bloom period Feb-Mar.	N	Suitable habitat not present. Proposed project area below known species elevation range.
Arctostaphylos pajaroensis	Pajaro manzanita	None	None	1B.1	Evergreen shrub. Species prefers sandy chaparral habitats; 98-2,493 ft. Bloom period Dec-Mar.	N	Suitable habitat not present.
Arctostaphylos silvicola	Bonny Doon manzanita	None	None	1B.2	Perennial evergreen shrub. Prefers inland marine sandy habitats, closed-cone coniferous forests, chaparral, and lower montane coniferous forests; 393-1,968 ft. Bloom period Jan-Mar.	N	Suitable habitat not present. Proposed project area below known species elevation range.
Arenaria paludicola	marsh sandwort	FE	SE	1B.1	Perennial stoloniferous herb. Sandy soils in marshes and swamps with brackish freshwater; 10–558 ft. Bloom period: May–Aug.	N	Suitable habitat not present.

Calyptridium parryi var. hesseae	Santa Cruz Mountains pussypaws	None	None	1B.1	Annual herb. Species prefers sandy and gravelly soils in openings of chaparral and cismontane woodland; 1,000–5,020 ft. Bloom period: May–Aug.	N	Suitable habitat not present. Proposed project area below known species elevation range.
Campanula californica	swamp harebell	None	None	1B.2	Perennial rhizomatous herb. Species prefers mesic soils in bogs, fens, meadows, seeps, freshwater marshes and swamps, coastal prairie, and closed-cone and north coast coniferous forests; 0–1,330 ft. Bloom period: June–October.	N	Saturated river edges may provide suitable habitat for the species; however, these areas will be fully avoided during project activities.
Carex comosa	bristly sedge	None	None	2B.1	Perennial rhizomatous herb. Species prefers coastal prairie, lake margins of marshes and swamps, wet grassland; 0–2,050 ft. Bloom period: May–Sep.	N	Suitable habitat not present.
Carex saliniformis	deceiving sedge	None	None	1B.2	Perennial rhizomatous herb. Species prefers coastal prairie, coastal scrub, meadows and seeps, and coastal salt marshes; 9-754 ft. Bloom period: Jun-Jul.	N	Suitable habitat not present.
Chorizanthe pungens var. hartwegiana	Ben Lomond spineflower	FE	None	1B.1	Perennial herb. Species known to occur in chaparral, cismontane woodlands, and lower montane coniferous forests (maritime ponderosa pine sandhills); 164-2,624 ft. Bloom period Jun - Oct.	N	Suitable habitat not present. Proposed project area below known species elevation range.
Chorizanthe pungens var. pungens	Monterey spineflower	FT	None	1B.2	Annual herb. Species known to occur in sandy habitats, chaparral, cismontane woodlands, coastal dunes, coastal scrub, and valley and foothill grasslands; 9-1,476 ft. Bloom period Apr-Jun.	N	Northernmost population thought to be near Rodeo Gulch Road (USFWS 2009). Suitable sandy soils not present (USDA 2019).
Chorizanthe robusta var. hartwegii	Scotts Valley spineflower	FE	None	1B.1	Annual herb. Species prefers meadows and seeps (sandy) and valley and foothill grasslands; 754-800 ft. Bloom period Apr-Jul.	N	Proposed project area below known species elevation range.
Chorizanthe robusta var. robusta	robust spineflower	FE	None	1B.1	Annual herb. Species prefers sandy or gravelly soils in maritime chaparral, coastal dunes and scrub, and openings of cismontane woodland; 5–985 ft. Bloom period: Apr–Sep.	N	Suitable habitat not present. Suitable sandy soils not present (USDA 2019).
Cirsium andrewsii	Franciscan thistle	None	None	1B.2	Perennial herb. Species known to occur sometimes in serpentine and mesic soils in coastal scrub, prairie, and bluff scrub and broadleafed upland forest; 0–490 ft. Bloom period: Mar–Jul.	N	Suitable habitat not present. Serpentine soils not present.

Collinsia multicolor	San Francisco collinsia	None	None	1B.2	Annual herb. Species sometimes found in serpentine soils in coastal scrub and closed-cone coniferous forest; 95–820 ft. Bloom period: Feb–May.	N	Suitable habitat not present.
Dacryophyllum falcifolium	tear drop moss	None	None	1B.3	Low growing moss found in north coast coniferous forests; 164-902 ft.	N	Suitable habitat not present.
Eriogonum nudum var. decurrens	Ben Lomond buckwheat	None	None	1B.1	Perennial herb. Sandy soils in chaparral, cismontane woodland, and lower montane conifeorus forest (maritime ponderosa pine sandhills); 164-2,625 ft. Bloom period: Jun-Oct.	N	Suitable habitat not present.
Erysimum ammophilum	sand-loving wallflower	None	None	1B.2	Perennial herb. Species prefers sandy, openings in maritime chaparral, coastal dunes, coastal scrub; 0-197 ft. Bloom period: Feb-Jun.	N	Suitable habitat not present.
Erysimum teretifolium	Santa Cruz wallflower	FE	SE	1B.1	Perennial herb. Species prefers inland marine sands, chaparral, and lower montane coniferous forests; 393-2,000 ft. Bloom period: Mar-Jul.	N	Suitable habitat not present. Proposed project area below known species elevation range.
Fissidens pauperculus	minute pocket moss	None	None	1B.2	Moss. Prefers damp soil in north coast coniferous forest; 30–3,360 ft.	N	Suitable habitat not present.
Hesperocyparis abramsiana var. abramsiana	Santa Cruz cypress	FT	SE	1B.2	Evergreen tree. Species known to prefer sandstone soils in chaparral and lower montane and closed-cone coniferous forests; 1,310–1,610 ft. Cone production: Oct.	N	Suitable habitat not present. Proposed project area below known species elevation range.
Hoita strobilina	Loma Prieta hoita	None	None	1B.1	Perennila herb. Species prefers serpentine, mesic soils. Known in chaparral, cismontane woodlands, and riparian woodlands; 98-2,821 ft. Bloom period May-Jul(Aug-Oct).	N	Riparian areas may provide suitable habitat; however, these areas will be fully avoided.
Holocarpha macradenia	Santa Cruz tarplant	FT	SE	1B.1	Annual herb. Often clay or sandy soils in coastal prairie, scrub, and grasslands; 30–720 ft. Bloom period: Jun–Oct.	N	Large population known to occur along Graham Hill Road less than a mile north of the project area (CDFW 2019). Annual grassland and ruderal areas provide suitable habitat in theory; however, both project parcels are highly disturbed and subject to ongoing management by the City, including twice annual weed abatement by string trimmer, likely precluding the presence of this species.

Horkelia cuneata var. sericea	Kellogg's horkelia	None	None	1B.1	Perennial herb. Species prefers sandy or gravelly soils in openings of maritime chaparral, coastal dunes and scrub, and closed-cone coniferous forest; 30–655 ft. Bloom period: Apr–Sep.	N	Suitable habitat not present.
Horkelia marinensis	Point Reyes horkelia	None	None	1B.2	Perennial herb. Species prefers sandy soils in coastal dune, prairie, and scrub; 15–2,475 ft. Bloom period: May–Sep.	N	Suitable habitat not present.
Lasthenia californica ssp. macrantha	perennial goldfields	None	None	1B.2	Perennial herb. Coastal scrub, dunes, and bluff scrub; 15–1,705 ft. Bloom period: Jan–Nov.	N	Suitable habitat not present.
Lessingia micradenia var. glabrata	smooth lessingia	None	None	1B.2	Annual herb. Species prefers serpentine soils (often roadsides), chapparal, cismontane woodlands, as well as, valley and foothill grasslands; 393 - 1,377 ft. Bloom period (Apr-Jun)Jul-Nov.	N	Proposed project area below known species elevation range. No serpentine soils present.
Malacothamnus arcuatus	arcuate bush-mallow	None	None	1B.2	Evergreen shrub. Species prefers chaparral and cismontane woodland; 45–1,165 ft. Bloom period: Apr–Sep.	N	Suitable habitat not present.
Microseris paludosa	marsh microseris	None	None	1B.2	Perennial herb. Species prefers grassland, coastal scrub, cismontane woodland, and closed-cone coniferous forest; 15–1,165 ft. Bloom period: Apr–Jul.	N	Suitable habitat present; however, level of disturbance likely precludes presence of this species.
Monardella sinuata ssp. nigrescens	northern curly-leaved monardella	None	None	1B.2	Annual herb. Species prefers sandy soils in chaparral, coastal dunes and scrub, and ponderosa pine sandhill forests; 0–985 ft. Bloom period: Apr–Sep.	N	Suitable habitat not present.
Monolopia gracilens	woodland woolythreads	None	None	1B.2	Annual herb. Species prefers serpentine soils in the openings of chaparral and broadleafed upland and north coast coniferous forests, grassland, and cismontane woodland; 325–3,935 ft. Bloom period: Feb–Jul.	N	Proposed project area below known species elevation range. No serpentine soils present.
Pedicularis dudleyi	Dudley's lousewort	None	SR	1B.2	Perennial herb. Species prefers maritime chaparral, cismontane woodland, grassland, and north coast coniferous forest; 195–2,955 ft. Bloom period: Apr–Jun.	N	Proposed project area below known species elevation range.
Penstemon rattanii var. kleei	Santa Cruz Mountains beardtongue	None	None	1B.2	Perennial herb. Species prefers chaparral, lower montane coniferous forest, and North Coast coniferous forest; 1,310-3,610 ft. Bloom period: May-Jun.	N	Proposed project area below known species elevation range.

Pentachaeta bellidiflora	white-rayed pentachaeta	FE	SE	1B.1	Annual herb. Species prefers cismontane woodland and grasslands with serpentine soils; 110–2,035 ft. Bloom period: Mar–May.	N	Serpentine soils not present; no verified occurrences in Santa Cruz County since the 1950's (California Consortium of Herbaria 2019).
Pinus radiata	Monterey pine	None	None	1B.1	Evergreen tree. Species prefers cismontane woodland and closed-cone coniferous forest; 80–605 ft. Cone production: Variable.	N	Only native stands warrant protection.
Piperia candida	white-flowered rein orchid	None	None	1B.2	Perennial herb. Species prefers serpentine soils in broadleafed upland and lower montane and north coast coniferous forests; 95–4,300 ft. Bloom period: (Mar) May–Sep.	N	Suitable habitat not present. Serpentine soils not present.
Plagiobothrys chorisianus var. chorisianus	Choris' popcornflower	None	None	1B.2	Annual herb. Species prefers mesic soils in chaparral and coastal prairie and scrub; 5–525 ft. Bloom period: Mar–Jun.	N	Suitable habitat not present.
Plagiobothrys diffusus	San Francisco popcornflower	None	SE	1B.1	Annual herb. Species known to occur in coastal prairie and grassland; 195–1,180 ft. Bloom period: Mar–Jun.	N	Proposed project area below known species elevation range.
Polygonum hickmanii	Scotts Valley polygonum	FE	SE	1B.1	Annual herb. Species known to occur in the valley and foothill grasslands; 688 - 820 ft. Bloom period: May - Aug.	N	Suitable habitat not present.
Rosa pinetorum	pine rose	None	None	1B.2	Perrenial shrub. Species known in closed-cone coniferous forest and cismontane woodlands; 6 - 3,100 ft. Bloom period: May/Jul.	N	Suitable habitat not present.
Senecio aphanactis	chaparral ragwort	None	None	2B.2	Annual herb. Species prefers chaparral, Cismontane woodland, coastal scrub, and alkaline flats; 49–2,624 ft. Bloom period: Jan–Apr.	N	Suitable habitat not present.
Silene verecunda ssp. verecunda	San Francisco campion	None	None	1B.2	Perennial herb. Species prefers mudstone or shale in coastal scrub, prairie, and bluff scrub and grassland; 95–2,115 ft. Bloom period: Feb–Jun (Aug).	N	Suitable habitat not present.
Stebbinsoseris decipiens	Santa Cruz microseris	None	None	1B.2	Annual herb. Species prefers sometimes in serpentine soils in openings of broadleafed upland and closed-cone coniferous forests, chaparral, coastal prairie and scrub, and grassland; 30–1,640 ft. Bloom period: Apr–May.	N	Occurs on open areas in loose or disturbed soil, usually derived from sandstone, shale or serpentine, on seaward slopes (CDFW 2019). Suitable habitat not present.
Stuckenia filiformis ssp. alpina	slender-leaved pondweed	None	None	2B.2	Aquatic perennial rhizomatous herb. Species prefers shallow freshwater marshes and swamps; 980–7,055 ft. Bloom period: May–Jul.	N	Suitable habitat not present.

Trifolium buckwestiorum	Santa Cruz clover	None	None	1B.1	Annual herb. Species prefers gravelly soils and margins in broadleafed upland forest, cismontane woodland, and coastal prarie; 345-2,000 ft. Bloom period: Apr-Oct.	N	Suitable habitat not present. Proposed project area below known species elevation range.
Trifolium polyodon	Pacific Grove clover	None	Rare	1B.1	Annual herb. Species known in mesic and sometimes granatic habitats. Additionally prefers closed-cone coniferous forests, coastal pine, meadows and seeps, and valley and foothill grasslands; 16 - 1,394 ft. Bloom period: Apr-Jun(Jul).	N	Grasslands in project area are not mesic and are highly disturbed. Other occurrences in Santa Cruz Co. associated with wet depressions and meadow streams (CDFW 2019).

Note: All habitat descriptions derived form CNPS 2019

CITATIONS

California Consortium of Herbaria. 2019. CCH1. Available at: http://ucjeps.berkeley.edu/consortium/
CDFW (California Department of Fish and Wildlife). 2019. California Natural Diversity Database – RareFind 5 and BIOS. CDFW Biogeographic Data Branch, Sacramento, California. Available online: https
CNPS (California Native Plant Society). 2019. Rare Plant Program. Inventory of Rare and Endangered Plants of California (online edition, v8-03 0.39). Available online: http://www.rareplants.cnps.org.
USDA (United States Department of Agriculture). 2019. Natural Resources Conservation Service Web Soil Survey 2.3. http://websoilsurvey.nrcs.usda.gov/
USFWS (United States Fish and Wildlife Service). 2009. Monterey Spineflower 5-Year Review. USFWS; Ventura, CA.

Scientific Name	Common Name	USFWS	CDFW	Habitat Characteristics	Impacts Analyzed	Rationale
Invertebrates						
Cicindela ohlone	Ohlone tiger beetle	FE	None	The species is known to inhabit native grasslands that include California oat grass (*Danthonia californica*) and purple needle grass (*Stipa pulchra*) with poorly-drained clay or sandy clay soil over bedrock of Santa Cruz mudstone (NatureServe 2018)	N	Suitable habitat not present.
Danaus plexippus pop. 1	monarch (California overwintering population)	FC	None	Typically overwinter in groves of eucalyptus (*Eucalyptus* spp.), Monterey pine (*Pinus radiata*), or Monterey cypress (*Hesperocyparis macrocarpa*) along the California coast (IELP 2012).	N	Suitable habitat not present.
Euphilotes enoptes smithi	Smith's blue butterfly	FE	None	Require host plants: coast buckwheat (*Eriogonum latifolium*) and seacliff buckwheat (*Eriogonum parvifolium*). Known from primarily coastal dune habitats, but also recorded in chaparral, scrub and grassland (USFWS 2006).	N	Suitable habitat not present. Host plant not present. Annual grassland may occur in the area, but is highly disturbed.
Polyphylla barbata	Mount Hermon (=barbate) June beetle	FE	None	Habitat is described as, "sand parkland and other sandy areas within chaparral and ponderosa pine (*Pinus ponderosa*) stands". The habitat is further described as sparsely vegetated. The Mount Hermo June beetle (*Polyphylla barbata*) is endemic to the Santa Cruz sandhills, where it inhabits both the sand parkland and sand chaparral communities (SCCPD 2019).	N	Suitable habitat not present.
Trimerotropis infantilis	Zayante band-winged grasshopper	FE	None	Species is known to occur in open sandy areas with sparse, low annual and perennial herbs on ridges with sparse ponderosa pine. Additionally, they are known to prefer Zayante soils, which only occur in three primary clusters throughout Santa Cruz County (USFWS 1997).	N	Suitable habitat not present.
Fishes						
Acipenser medirostris	southern DPS green sturgeon	FE	SSC	Adult and subadult sDPS green sturgeon spend much of their life coexisting in both marine and estuarine systems stretching along the west coast from Alaska to Baja California. The species spawns primarily in the main stem of the Sacramento River. Additionally, the San Francisco Bay Delta and accompanying estuary provides juveniles year-round rearing habitat, in addition to foraging habitat for non-spawning adults and subadults during summer (Calfish 2018).	N	Outside species range.
Eucyclogobius newberryi	tidewater goby	FE	SSC	The species is known to prefer shallow coastal lagoons, as well as th uppermost brackish zone of larger estuaries. Shallow open water habitats with emergent vegetation are favorable. Rarely found in marine or freshwater environments. Typically associated with still water, less than 3.3 feet deep, with salinites of less than 10 parts per thousand (Calfish 2018).	N	Suitable habitat not present.
Oncorhynchus kisutch pop. 2	coho salmon - southern Oregon / northern California ESU	FE	ST	Spawning occurs in small streams with stable gravel substrates. Non-spawning occurs in estuarine and/or marine waters (Weitkamp 1995). Occurs in Del Norte, Siskiyou, Humboldt, Trinity, Mendocino, and northern Lake counties (Moyle 2002).	Y	Species may be found in open water habitats of the San Lorenzo River. No in-water work is proposed; however, a frac-out event has the potential to negatively impact the species.
Oncorhynchus kisutch pop. 4	coho salmon (central California DPS)	FE	SE	The species was historically widely distributed in coastal watersheds of central and northern California, from the Smith River near the Oregon border to the San Lorenzo River, Santa Cruz County. Individuals occurring on the California coast prefer small coastal streams, as well as larger rivers. Adult coho salmon enter fresh water to spawn from September through January. Migration typically begins between mid-November and mid-January (Moyle 2002).	Y	Species may be found in open water habitats of the San Lorenzo River. No in-water work is proposed; however, a frac-out event has the potential to negatively impact the species.
Oncorhynchus mykiss irideus	Steelhead (central California coast DPS)	FT	None	In California, coastal rainbow trout are the most widely-distributed native trout form and are found on the western slopes of the Sierra Nevada in waters draining to the Pacific Ocean (Calfish 2018).	Y	Species may be found in open water habitats of the San Lorenzo River. No in-water work is proposed; however, a frac-out event has the potential to negatively impact the species.
Thaleichthys pacificus (southern DPS)	eulachon	FT	None	The species inhabits both rivers and ocean. Eulachon are susceptibl to poor water quality since they easily incorporate toxic substances. Spawning typically occurs with tidal influence, but tends to happen much further upstream of the river mouth. Spawning tends to take place in areas with moderate water velocities, water temperatures ranging from 4-10°C, and small substrate (gravel or sand) near debris . Southernmost spawning river is the Mad River (Calfish 2018).	N	Outside species range.
Amphibians						

Ambystoma californiense	California tiger salamander	FE	ST	Breeding ponds are usually fish-free & ephemeral. Ponds form in winter and dry in summer. May also breed in slow streams and semi-permanent waters, including cattle ponds. Needs both suitable upland habitat and breeding ponds. Mostly fossorial & often utilizes mole/ground squirrel burrows. Typical habitat associations include grassland, oak savanna, and edges of mixed woodland and lower elevation coniferous forest (Nafis 2017).	N	The proposed project area is outside of the known species range (USFWS 2019)
Ambystoma macrodactylum croceum	Santa Cruz long-toed salamander	FE	SE, FP	Species known to inhabit thick riparian vegetation, coastal scrub, and oak woodland along the Monterey Bay coast, southern Santa Cruz County, and the northern edge of Monterey County (Nafis 2017). Species requires ponds for breeding (USFWS 1999).	N	Species may be found in the thick riparian vegetation occurring on the edges of the San Lorenzo River. CNDDB occurrence records found roughly 9 miles of the proposed project area (CDFW 2019). The current distribution of the species is limited to southern Santa Cruz County (USFWS 2019).
Aneides flavipunctatus niger	Santa Cruz black salamander	None	SSC	The species tends to occur in mixed deciduous woodlands, coniferou forests, and coastal grasslands. Individuals can be found under rocks near streams, in talus, under damp logs, and other objects (Nafis 2017).	Y	Suitable habitat present. Species may be found in the thick riparian vegetation occurring on the edges of the San Lorenzo River.
Dicamptodon ensatus	California giant salamander	None	SSC	Species known to inhabit wet coastal forests in or near clear, cold permanent and semi-permanent streams and seepages. Found from Mendocino County near Point Arena east into the coast rages into Lake and Glenn counties, south to Sonoma and Marin counties, continuing south of the San Francisco Bay from San Mateo County to southern Santa Cruz County (Nafis 2017).	Y	Species may be found in the thick riparian vegetation occurring on the edges of the San Lorenzo River.
Rana boylii	foothill yellow-legged frog	None	CT, SSC	Species frequents rocky streams and rivers with rocky substrate and open, sunny banks, in forests, chaparral, and woodlands. Sometimes found in isolated pools, vegetated backwaters, and deep, shaded, spring-fed pools. From sea level to 6700 feet. Occurs in the Coast Ranges from the Oregon border south to the Transverse Mountains i Los Angeles Counties, in most of northern California west of the Cascade crest and along the western side of the Sierra County south to Kern County (Nafis 2017).	Y	Species may be found on rocky stream edges of the San Lorenzo River.
Rana draytonii	California red-legged frog	FE	SSC	Species known to inhabit ponds/streams in humid forests, woodlands grasslands, coastal scrub, and streamsides with plant cover in lowlands or foothills. Breeding habitat includes permanent or ephemeral water sources; lakes, ponds, reservoirs, slow streams, marshes, bogs, and swamps. Ephemeral wetland habitats require animal burrows or other moist refuges for estivation when the wetlands are dry. Species found from sea level to 5,000 feet (Nafis 2017). Occurs along the Coast Ranges from Mendocino County sout and in portions of the Sierra Nevada and Cascades ranges (Zeiner e al. 1988-1990).	Y	Species may be found on rocky/vegetative stream edges of the San Lorenzo River.
Spea hammondii	western spadefoot	None	SSC	Species known to occur in open areas with sandy/gravelly soils. Individuals prefer variable habitats including mixed woodlands, grasslands, coastal sage scrub, chaparral, sandy washes, lowlands, river floodplains, alluvial fans, playas, alkali flats, foothills, and mountains. Rain pools which do not contain bullfrogs, fish, or crayfish are necessary for breeding (Nafis 2017).	N	Suitable habitat not present.
Taricha torosa	coast range newt	None	SSC	Found in wet forests, oak forests, chaparral and rolling grasslands. In southern California, drier chaparral, oak woodland and grassland are used (Nafis 2017).	Y	Suitable habitat present. Species may be found on vegetative edges of the San Lorenzo River.
Reptiles						
Anniella pulchra	northern California legless lizard	None	SSC	Occurs in sparsely vegetated areas of beach dunes, chaparral, pine-oak woodland, desert scrub, sandy washes, and stream terraces (Nafis 2017).	N	Suitable habitat not present.
Emys marmorata	western pond turtle	None	SSC	Found in a wide variety of habitats throughout California, but i typically associated with permanent ponds, lakes, streams, irrigation ditches, and permanent pools along intermittent streams. Occurs throughout California, west of the Sierra-Cascade crest and absent from desert regions, except in the Mojave Desert along the Mojave River. (Zeiner et al. 1988-1990)	Y	Species may utilize damp/vegetative margins along the San Lorenzo River
Thamnophis sirtalis tetrataenia	San Francisco garter snake	FE	SE, FP	Species known to utilize a wide variety of habitats, preferring grasslands or wetlands near ponds, marshes and sloughs. May overwinter in upland areas away from water (Nafis 2017).	N	Outside known species range (Nafis 2017).
Birds						

Agelaius tricolor	tricolored blackbird	None	CE, SSC	Preferred nesting habitat includes cattails (*Typha* spp.), Himalayan berry (*Rubus armeniacus*), and agricultural silage. Dense vegetation is preferred but heavily lodged cattails not burned in recent years may preclude settlement. Need access to open water. Strips of emergent vegetation along canals are avoided as nest sites unless they are about 32 or more feet wide but in some ponds, especially where associated with Himalayan blackberries and deep water, settlement may be in narrower fetches of cattails. (Hamilton 2004). Breeds locally in northeastern California. In winter, becomes more widespread along central coast and San Francisco Bay area and is found in portions of the Colorado Desert (CDFW 2017).	Y	Blackberry thickets and dense vegetation along the edge of the San Lorenzo River provide suitable foraging and nesting habitat for this species.
Aquila chrysaetos	golden eagle	BGEPA	FP	Preferred habitat includes rolling foothills and mountain terrain, wide arid plateaus deeply cut by streams and canyons, open mountain slopes, and cliffs and rock outcrops. Uncommon resident and migrant throughout California, except the center of the Central Valley. (CDFW 2017).	N	Open mountain slopes and cliffs not present. Dense tree canopy does not provide open hunting habitat.
Athene cunicularia	burrowing owl	None	SSC	Nesting habitat includes open areas with mammal burrows, including rolling hills, grasslands, fallow fields, sparsely vegetated desert scrub, vacant lots and human disturbed lands. Soils must be friable for burrows (Bates 2006).	N	No open areas with mammal burrows present.
Brachyramphus marmoratus	marbled murrelet	FE	CE	Species is a long-lived seabirds that typically spend most of their life in marine habitats, but are known to use old-growth with large trees and multiple canopy layers for nesting. Individuals feed on fish and invertebrates in near-shore marine waters, but occasionally can be found on rivers and inland lakes (USFWS 2011).	N	Suitable habitat not present.
Chaetura vauxi	Vaux's swift	None	SSC	Prefers redwood (*Sequoia sempervirens*) and Douglas fir (*Pseudotsuga menziesii*) habitats with nest sites in large hollow trees and snags, especially tall, burnt-out stubs (CDFW 2017).	N	Suitable habitat not present.
Charadrius alexandrinus nivosus	western snowy plover	FE	SSC	Coastal populations nest on dune-backed beaches, sand spits, beaches at creeks and river mouths, and salt pans at lagoons and estuaries (USFWS 2007). Inland populations nest along barren to sparsely vegetated flats and along shores of alkaline and saline lakes reservoirs, ponds, braided river channels, agricultural wastewater ponds, and salt evaporation ponds (Shuford and Gardali 2008). Inlan nesting areas occur at the Salton Sea, Mono Lake, and at isolated sites on the shores of alkali lakes in northeastern California, in the Central Valley, and southeastern deserts (CDFW 2017).	N	Suitable habitat not present.
Charadrius montanus	mountain plover	None	SSC	Frequents open plains with low, herbaceous or scattered shrub vegetation below 3,200 feet (CDFW 2017).	N	Suitable habitat not present.
Circus hudsonius	northern harrier	None	SSC	Nest on the ground in patches of dense, tall vegetation in undisturbed areas. Breed and forage in variety of open habitats such as marshes wet meadows, weedy borders of lakes, rivers and steams, grasslands, pastures, croplands, sagebrush flats and desert sinks (Shuford and Gardali 2008).	N	Dense tree canopy does not provide suitable foraging habitat.
Contopus cooperi	olive-sided flycatcher	None	SSC	Preferred habitat is forest and woodland, with adjacent meadows, lakes or open terrain for foraging. Occurs throughout California exclusive of the deserts, the Central Valley, and other lowland valleys and basins (CDFW 2017).	Y	Species may occur in forested edges of the proposed project area.
Coturnicops noveboracensis	yellow rail	None	SSC	Species known to prefer densely vegetated marshes. Require sedge marshes/meadows with moist soil or shallow standing water for breeding (Shuford and Gardali 2008).	N	Suitable habitat not present.

Cypseloides niger	black swift	None	SSC	Breeding sites are very specific: behind or beside permanent or semi permanent waterfalls, on perpendicular cliffs near water and in sea caves. Additionally, individuals breed very locally in the Sierra Nevada and Cascade Range, the San Gabriel, San Bernardino, and San Jacinto Mountains, and in coastal bluffs and mountains from San Mateo County south to San Luis Obispo County (Shuford and Gardali 2008).	N	Suitable habitat not present.
Elanus leucurus	white-tailed kite	None	FP	Occurs in herbaceous and open stages of valley lowland habitats, usually near agricultural land. Forages in undisturbed, open grasslands, meadows, farmlands and emergent wetlands. Typically nest in the upper third of trees that may be 10–160 feet tall. These can be open-country trees growing in isolation, or at the edge of or within a forest (Cornell 2017).	Y	Agricultural lands are present to the north. Large trees surrounding the proposed project site could serve as suitbale nesting habitat.
Empidonax traillii extimus	southwestern Willow Flycatcher	FE	SE	Species is a migrant that is known to breed in patches of riparian habitat throughout the American southwest. Individuals require moist climates and vegetative conditions. Additionally, they are known to breed in thick riparian vegetation near surface water or wetted soils. The species is known to utilize tamarisk (*Tamarix* spp.), as well as in native willow (*Salix* spp.), in vegetation stands of 13–22 feet in height to build nests. Patches of riparian habitat are utilized during migration (NPS 2016).	N	Outside known species range (CDFW 2019).
Falco peregrinus anatum	American peregrine falcon	Delisted	Delisted, FP	Species known to breed near wetlands, lakes, rivers, or other waters on cliffs, banks, dunes or mounds, mostly in woodland, forest and coastal habitats. Nest is a scrape on a depression or ledge in an ope site. May use man-made structures, snags, or trees for nesting (CDFW 2017).	N	Suitable habitat not present.
Geothlypis trichas sinuosa	saltmarsh common yellowthroat	None	SSC	Breeds and winters in wet meadow, fresh emergent wetland, and saline emergent wetland habitats. Also breeds in valley foothill riparian, occasionally in desert riparian, annual grassland, and perennial grassland habitats (CDFW 2017).	N	Saline emergent wetland habitat and wet meadows not present.
Gymnogyps californianus	California condor	FE	SE, FP	Chaparral, coniferous forest and oak savannah in southern and central California. Nest in cliff cavities, large rock outcrops, or large trees. Roost on large cliffs or trees near feeding areas (USFWS 1996).	N	Large rock outcrops, tall cliffs, and large trees not present.
Haliaeetus leucocephalus	bald eagle	BGEPA, Delisted	SE, FP	Nests in large, old-growth, or dominant live tree with open branch work, especially ponderosa pine. Requires large bodies of water or rivers with abundant fish, and adjacent snags. Permanent resident, and uncommon winter migrant, now restricted to breeding mostly in Butte, Lake, Lassen, Modoc, Plumas, Shasta, Siskiyou, and Trinity counties. About half of the wintering population is in the Klamath Basin (CDFW 2017).	N	Species unlikely to nest near distured areas. Surrounding trees too small to support nesting activity.
Icteria virens	yellow-breasted chat	None	SSC	Nest in early-successional riparian habitats with a well-developed shrub layer and an open canopy. Restricted to narrow border of streams, creeks, sloughs and rivers. Often nest in dense thicket plant such as blackberry and willow (Shuford and Gardali 2008).	N	Outside known species range (Shuford and Gardali 2008).
Lanius ludovicianus	loggerhead shrike	None	SSC	Breed in shrublands or open woodlands with a fair amount of grass cover and areas of bare ground (Shuford and Gardali 2008).	Y	Species may utilize areas adjacent to the pump station along the San Lorenzo River.
Laterallus jamaicensis coturniculus	California black rail	None	ST, FP	Yearlong resident of saline, brackish, and fresh emergent wetlands (Zeiner et al. 1988-1990)	N	Suitable habitat not present.
Passerculus sandwichensis alaudinus	Bryant's savannah sparrow	None	SSC	Inhabits low tidally influenced habitats, adjacent ruderal areas, moist grasslands within and just above the fog belt, and, infrequently, drier grasslands (Shuford and Gardali 2008).	N	Suitable habitat not present. Suitable habitat typically includes tidally influenced areas or wetted grasslands if more upland (Shuford and Gardali 2008).

Pelecanus occidentalis californicus	California brown pelican	Delisted	Delisted, FP	Warm coastal marine and estuarine environments. Individuals are rarely found inland. Breeds primarily on islands (Cornell 2013).	N	Suitable habitat not present. Occurrence inland is rare.
Progne subis	purple martin	None	SSC	Inhabits open forests, woodlands, and riparian areas in breeding season. Found in a variety of open habitats during migration, includir grassland, wet meadow, and fresh emergent wetland, usually near water. In southern California, now only a rare and local breeder on th coast and in interior mountain ranges, with few breeding localities. Absent from higher desert regions except as a rare migrant. In northern California, an uncommon to rare local breeder on the coast and inland to Modoc and Lassen Counties (CDFW 2017).	Y	Species may utilize forested edges, grassy patches, and riparian areas along the San Lorenzo River.
Riparia riparia	bank swallow	None	ST	Riparian areas with sandy, vertical bluffs or riverbanks. Also nest in earthen banks and bluffs, as well as sand and gravel pits (CDFW 2017).	N	Species unlikely to occur. Burrows no seen near project area and banks are not tall and bare.
Sterna antillarum browni	California least tern	FE	SE	The species is known to inhabit coastlines, beaches, estuaries, lagoons, lakes, and rivers. Often utilizes sandy beaches, mudflats, and salt-ponds. Individuals are known to nest on open, flat beaches along lagoon or estuary edges; sometimes on mud or sand flats a distance from the ocean (NatureServe 2018).	N	Suitable habitat not present. Sandy beaches and mudflats not present.
Vireo bellii pusillus	least Bell's Vireo	FE	SE	This tiny songbird is a migrant that prefers thick brush, willow-cottonwood (*Populus* spp.) forests, streamside thickets, and scrub oak, in arid regions usually near water (NatureServe 2018).	N	Species may utilize densely vegetated edges along the San Lorenzo River.
		Mammals				
Antrozous pallidus	pallid bat	None	SSC	Day roosts are in caves, crevices, mines, and occasionally in hollow trees and buildings (CDFW 2017).	Y	Species may utilize surrounding buildings and trees.
Corynorhinus townsendii	Townsend's big-eared bat	None	SSC	Cave-dwelling, also roosts in old mine-workings, occasionally found in buildings. Population concentrations in areas with cavity-forming rock and in old mining districts (Bolster 1998).	Y	Species may utilize surrounding buildings.
Enhydra lutris nereis	southern sea otter	FE	FP	Species known to inhabit coastal waters within 1.2 mile off shore, especially shallows with kelp beds and abundant shellfish (NatureServe 2018).	N	Proposed project is over 2.5 miles from the coast. No in-water work will occur as a result of the proposed project.
Lasiurus blossevillii	western red bat	None	SSC	Roosting habitat includes forests and woodlands, often in edge habitats adjacent to streams, fields, or urban areas (CDFW 2017).	Y	Species may utilize forested edges adjacent to the San Lorenzo River.
Neotoma fuscipes annectens	San Francisco dusky-footed woodrat	None	SSC	Found in grassland, scrub and wooded areas with evergreen or live oaks and other thick-leaved trees and shrubs (Kelly 1990).	Y	Species may utilize wooded areas adjacent to the San Lorenzo River for nesting or foraging.
Taxidea taxus	American badger	None	SSC	Open shrub, forest and herbaceous habitats with friable soils. Associated with treeless regions, prairies, park lands and cold desert areas. Range includes most of California, except the North Coast (CDFW 2017).	N	Suitable habitat not present. Burrows not observed during site surveys.

USFWS: U.S. Fish and Wildlife Service; CDFW: California Department of Fish and Wildlife; DPS: Distinct Population Segment

Species Names and Status Follows; California Department of Fish and Wildlife. October 2017. Special Animals List. Available on-line: https://www.wildlife.ca.gov/Data/CNDDB/Plants-and-Animals CDFW Biogeographic Data Branch. Sacramento, CA.

Species Status:

Federal (USFWS-USFS)	State (CDFW)
BGEPA Bald and Golden Eagle Protection Act	SE Endangered
FE Endangered	ST Threatened
feet Threatened	SCE Candidate Endangered
FCE Candidate Endangered	SCT Candidate Threatened
FCT Candidate Threatened	SCD Candidate for delisting
FCD Candidate for delisting	FP Fully Protected

FSS Forest Service Sensitive	SSC Species of Special Concern				

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Cultural Technical Memorandum

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Coast Pump Station Project Technical Memorandum

Santa Cruz Water Program

To: Leslie Tice

CC:

Date: February 12, 2019

From: Monica Ruth and Sandy Flint

Reviewed by:

Subject: Cultural Resources: Summary of Records Search Results

Records Search Methods

The records search for the City of Santa Cruz Coast Pump Station Project (Project) began with written requests on November 28, 2018, to the California Historical Resources Information System, Northwest Information Center (NWIC) at Sonoma State University. Data was requested for the project footprint plus a 0.25-mile buffer (referred throughout as the Study Area). Search results were received from the NWIC on December 20, 2018. The information requested was for previous cultural resources investigations, previously recorded archaeological sites and built environment resources, and reviews of the Office of Historic Preservation (OHP) Historic Properties Directory, the OHP Archaeological Determinations of Eligibility, and the California Inventory of Historical Resources (1976). Information was also requested on the Caltrans Bridge Survey, ethnographic information, and local inventories, if on file.

Records Search Results

The records search results identified 34 previously conducted cultural resources investigations and five previously recorded resources (see Attachment 1 – Map of Study Area and Records Search Results).

Previous Cultural Resources Investigations

The record searches identified 34 previous cultural resource investigations within the Study Area, of which seven are within the Project footprint (Table 1). The investigations occurred between the 1970s and 2015, and were conducted prior to a variety of different undertakings, to include proposed retail developments, religious building developments, water control/treatment facilities, flood control, road/highway and pedestrian facility construction, cultural resource evaluations, and recreation facilities. Many of these studies were not completed to current professional standards. The 34 investigations include two OHP correspondence documents and 32 archaeological or archaeological/historical reports, of which two are archaeological monitoring reports and two are archaeological excavation reports.

TABLE 1: PREVIOUS CULTURAL RESOURCES INVESTIGATIONS WITHIN THE PROJECT STUDY AREA

Count	IC File No. (S-…)	Author(s)	Year	Report Title	Within Project Footprint (Yes/No)
1.	3767	Morris, Joseph W.	1976	Preliminary Archaeological Reconnaissance of Proposed Goodwill Industries Development, Santa Cruz, California	No
2.	3959	Holman, Miley Paul	1978	An archaeological reconnaissance of the proposed location of the Quality Electronics building in the City of Santa Cruz, California (letter report)	No

Count	IC File No. (S-…)	Author(s)	Year	Report Title	Within Project Footprint (Yes/No)
3.	4005	Chavez, David	1979	Cultural Resources Assessment of the Pasatiempo/Rollingwoods Wastewater Project Locations, Santa Cruz County, California	No
4.	4035	Flynn, Katherine and William Roop	1976	Test Excavations of a Portion of 4-SCr-106, Goodwill Industries property, Santa Cruz, California	No
5.	4035a	Roop, William	1984	Archaeological monitoring near Scr-106, ARS- 4-12 (letter report)	No
6.	4089	Heicksen, Martin H.	1977	An Archaeological Evaluation of the Santa Cruz Public Works Department Municipal Service Center Parking Lot at River Street and Golf Club Drive, Santa Cruz, California	No
7.	10217	Jones, Terry	1988	Negative Archaeological Survey Report, proposed highway improvements, 04-SCR-9 P.M. 0.0-2.2 4273-121380	Yes
8.	11053	Bourdeau, Larry	1989	Results of Archaeological Monitoring with Recommendations for Cultural Resource Management, Goodwill Industries, Inc., Project Parcels APN 01-172-14 and 18, Santa Cruz	No
9.	15126	Cartier, Robert	1993	Cultural Resource Evaluation, Pogonip Creek Flood Control Project, City of Santa Cruz	No
10.	18986	Cartier, Robert and Lynne Eckert and John Reddington	1996	Cultural Resource Evaluation of the Pogonip Park Project in the Park Lands of the City of Santa Cruz	Yes
11.	21410	Cartier, Robert	1998	Cultural Resource Evaluation of the Property at 140 Vernon Street in the City of Santa Cruz	No
12.	22217	Cartier, Robert	1999	Cultural Resource Evaluation of the Property at 1314 River Street in the City of Santa Cruz	Yes
13.	22797	Doane, Mary and Trudy Haversat	2000	Preliminary Archaeological Reconnaissance of Assessor's Parcel 001-172-02, Santa Cruz, Santa Cruz County, California	No
14.	23744	Pomerleau, Monique M.	2001	Archaeological Reconnaissance for the Proposed Construction of a Sanitary Sewer Main Between Graham Hill Road and Ocean Street Extension, Santa Cruz, California	No
15.	24487	Doane, Mary and Trudy Haversat	2001	Preliminary Archaeological Reconnaissance for the Proposed SCMTD Metrobase Facility, on Encinal and River Streets in Santa Cruz, Santa Cruz County, California	Yes
16.	24487a	Doane, Mary and Trudy Haversat	2002	Preliminary Archaeological Reconnaissance for a Proposed SCMTD Metrobase Facility, on River Street and Golf Club Drive in Santa Cruz, Santa Cruz County, California	Yes
17.	28274	Doane, Mary and Trudy Haverstat	2003	Negative Historic Property Survey Report, proposed pedestrian bridge over the San Lorenzo River, south of the Highway 1 Bridge	No
18.	28274a	Doane, Mary	2003	Negative Archaeological Survey Report for the San Lorenzo River Pedestrian Bridge Project in the City of Santa Cruz, Santa Cruz County, California	No
19.	28274b	Doane, Mary	n.d.	Negative Historic Property Survey Report, proposed pedestrian bridge over the San Lorenzo River, south of the Highway 1 Bridge	No

Count	IC File No. (S-…)	Author(s)	Year	Report Title	Within Project Footprint (Yes/No)
20.	28274c	Doane, Mary	2003	Negative Archaeological Survey Report for the San Lorenzo River Pedestrian Bridge Project in the City of Santa Cruz, Santa Cruz County, California	No
21.	28809	Clark, Matthew	2004	An Archaeological Reconnaissance of the Proposed San Lorenzo Valley Trail Alignment Alternatives, Boulder Creek-Santa Cruz, Santa Cruz County, California	Yes
22.	32936	Doane, Mary and Trudy Haversat	2006	Preliminary Archaeological Reconnaissance of a Portion of Assessor's Parcel 001-172-03, Santa Cruz, Santa Cruz County, California	No
23.	33981	Larsen, Kelly	2007	Results of Archaeological Records Search and Survey at 1930 Ocean Street Extension, Santa Cruz, Santa Cruz County (letter report)	No
24.	37509	Haydu, Damon M.	2010	Cultural Resources Inventory for the Harvey West Segment of the North Coast System Rehabilitation Project, City of Santa Cruz, Santa Cruz County, California.	Yes
25.	38556	Doane, Mary and Gary Breschini	2011	Preliminary Archaeological Reconnaissance of a Portion of APN 008-051-28, In Santa Cruz County, California	No
26.	40205	Doane, Mary and Gary Breschini	2013	Preliminary Archaeological Assessment for the Rolling Woods and Graham Hill/Woods Cove Sewer Annexation Project in Santa Cruz, Santa Cruz County, California	No
27.	42664	Architectural Resources Group	2004	Conditions Description & Rehabilitation Recommendations for Significant Resources on the Salze Tannery Site	No
28.	42664a	Architectural Resources Group	2004	Area of Potential Effects for Historic Properties, The 1040 River Street Restoration of the Historic Buildings at the Site of the Former Salz Tannery	No
29.	42664b	Stratton, Susan K. and Joe H. Hall	2009	EDA090106A: Section 106 Consultation for Salz Tannery Rehabilitation Project, 1040 River Street, Santa Cruz, CA	No
30.	43628	Doane, Mary and Gary S. Breschini	2013	Preliminary Archaeological Reconnaissance for the Santa Cruz Memorial Park Crematorium and Landscape Building Project, in Santa Cruz, Santa Cruz County, California	No
31.	44164	Travers, Aniela	2012	Preliminary Archaeological Reconnaissance of Parcel (APN 001-172-04), 335 Golf Course Drive, Santa Cruz, Santa Cruz County, California	No
32.	44164a	Saunders, Jenan and Aniela Travers	2012	FCC120815H: CA1044-PIC Harvey Parks/SF73XC827, 146 Encinal St., Santa Cruz, Collocation	No
33.	44501	Lehmann, Susan and Gil Sanchez, and Daryl Allen	2002	Historic Evaluation of the Salz Tannery Site	No
34.	48775	Paramoure, Patricia	2015	Preliminary Archaeological Reconnaissance of Parcel (APN 001-172-04), 335 Golf Course Drive, Santa Cruz, Santa Cruz County, California	No

Previously Recorded Resources

The records search identified no cultural resources within the Project footprint. Within the ¼-mile buffer, there is one previously recorded archaeological resource and four historical built environment resources.

Archaeological Sites

One previously recorded prehistoric archaeological site overlaps with the Study Area (Table 2).This site consists of a large midden area, extensive lithic waste, a scatter of chert flakes, small cores, mano fragments, a chopper, and fire-cracked rock. Obsidian hydration was performed by Tom Origer and the source of obsidian was determined to be from Glass Mountain, Napa Valley (Cartier 1999). The site has not been evaluated for its potential eligibility for listing on the National Register of Historic Places (NRHP) or the California Register of Historical Resources (CRHR).

TABLE 2: PREVIOUSLY RECORDED PREHISTORIC ARCHAEOLOGICAL SITES

Primary No.	Trinomial No.	Resource Type	NRHP/CRHR Status	Within Project Footprint?
P-44-0110	CA-SCR-0106	Site with lithic scatter, hearth/pit, and habitation debris	Unevaluated	No

Historical Built Environment Resources

There is one previously recorded built environment resource within the Project footprint (P-44-0401, Highway 9) and three previously recorded built environment resources within the ¼-mile buffer (Table 3). The built environment resources in the ¼-mile buffer include Cowell Home Ranch District, a funeral and cremation services property, and a cemetery crematory-mausoleum. The Odd Fellows Cemetery and Crematory-Mausoleum has been found to be ineligible for listing on the NRHP (Doane and Breschini 2013),[1] but has not been evaluated for the CRHR. The remaining three resources are unevaluated for the NRHP and CRHR.

TABLE 3: PREVIOUSLY RECORDED HISTORICAL BUILT ENVIRONMENT RESOURCES

Primary No.	Trinomial No.	Resource Name	NRHP/CRHR Status	Within Project Footprint?
P-44-0855	–	Cowell Home Ranch District	Unevaluated	No
P-44-0401	CA-SCR-0329H	Highway 9	Unevaluated	Yes
P-44-1058	–	Arnold's Funeral and Cremation Services	Unevaluated	No
P-44-1059	–	Odd Fellows Cemetery Crematory-Mausoleum	Ineligible/Unevaluated	No

Potential Historical Cultural Resources Identified on Historic-era Maps

General Land Office (GLO) survey plats were reviewed to identify potential historical resources within the Study Area (Table 4). Some resources depicted on historic-era maps, if still physically present, may become archaeological sites as they disintegrate over time. Potential cultural resources identified include two light-use roads that traverse through the Study Area, including the Project footprint.

TABLE 4: RESOURCES DEPICTED ON GLO SURVEY MAPS

Date	Resource Type	Location	Within Project Footprint?
1876	Two roads	Northwest ¼ of Section 12 of Township 11S, Range 2W	Yes

[1] The inventory notes provided by the NCIC on report S-43628 indicate that the mausoleum was found ineligible for the National Register but significant to the local community.

Early United States Geological Survey (USGS) topographic maps were also reviewed to identify potential areas where historical structures may be found (Table 5). Highway 9 is depicted within the ¼-mile buffer of the project on each of the maps reviewed, below, as well as the Southern Pacific Railroad. Only a check dam and one road are found within the Project footprint and are shown on the 1954 Santa Cruz, CA 1:24,000 topographic quadrangle. Other resources identified within the ¼-mile buffer of the Study Area include light use roads, medium duty roads, and over 50 structures.

TABLE 5: RESOURCES DEPICTED ON HISTORICAL USGS TOPOGRAPHIC MAPS

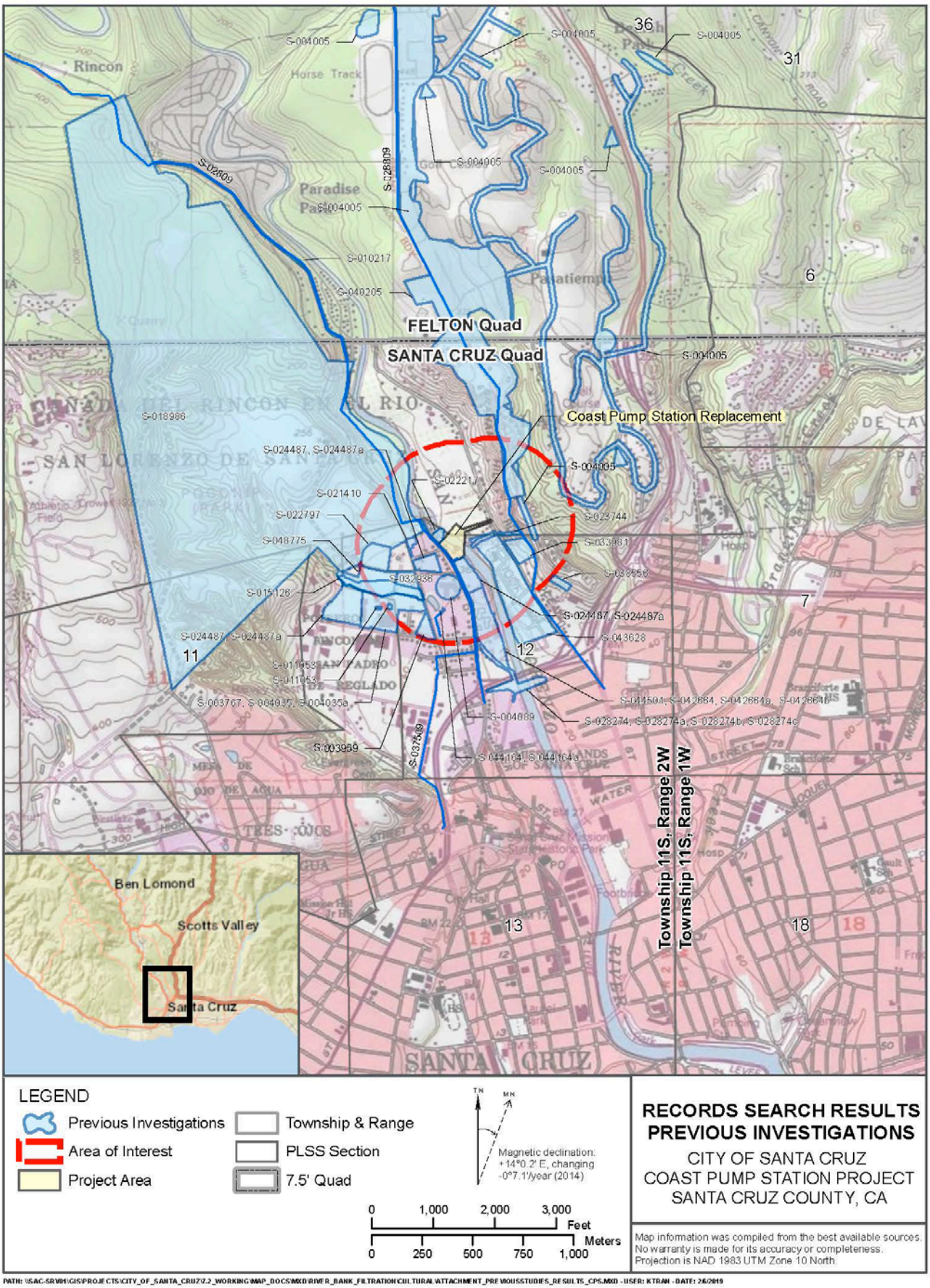
Date	Map	Resource Type	Within Project Footprint?
1948	Santa Cruz, CA 1:250,000 Topographic Quadrangle	Highway 9, Southern Pacific Railroad	No
1954	Santa Cruz, CA 1:24,000 Topographic Quadrangle	Within Section 12 of Township 11S, Range 2W and extending north into the Canada Del Rincon en el Rio, San Lorenzo de Santa Cruz: Highway 9, South Pacific Railroad, 50+ buildings, seven roads, a check dam, Graham Hill Road	Check dam and gauging station
1965	Santa Cruz, CA 1:250,000 Topographic Quadrangle	Highway 9, Southern Pacific Railroad	No

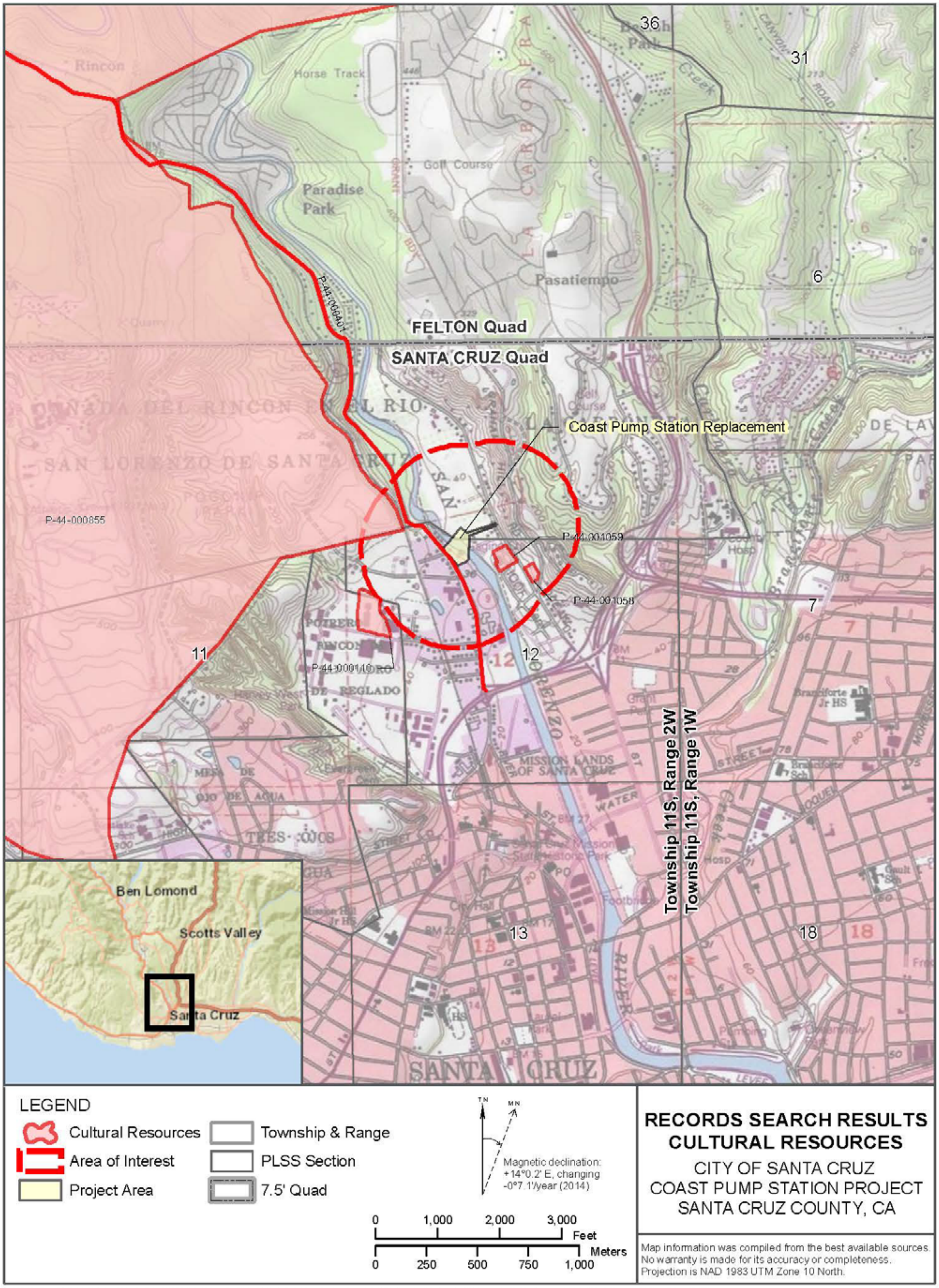
Summary

The records search results identified 34 previously conducted cultural resources investigations and five previously recorded resources within the Study Area. Of these, seven previous cultural resources investigations fall within the Project footprint and were completed between 1988 and 2010, all of which are archaeological field studies. Of the five previously recorded cultural resources identified in the records search, one previously recorded built environment resources within the Project footprint (P-44-0401, Highway 9) and only one has been evaluated for its eligibility for inclusion on the NRHP or CRHR and found ineligible for listing (P-44-1059). The review of historic-era maps indicates the potential for two historical resources to fall within the Project footprint: a check dam and gauging station, and the maps show historic-era use of the Study Area to be mostly transportation and residential.

The records search results indicate a low sensitivity to cultural resources within the Study Area where previous investigations have occurred. However, there is possibility of discovering currently undocumented resources within the Study Area as the Project is located in proximity to the San Lorenzo River. Pre-contact Native American habitation was typically located along historical waterways, as shown by the prehistoric occupation site within the Study Area. The resources identified outside of the Project footprint indicate the area was heavily used for historic-era transportation and water control Approximately 40-45 percent of the Study Area has not been surveyed and is along the river, therefore there is a low to moderate potential for near-surface unrecorded prehistoric sites as well as for finding additional historical resources within the unsurveyed portions of the Study Area.

Attachment 1 – Map of Study Area and Records Search Results





PATH: \\SAC-SRV01\GIS\PROJECTS\CITY_OF_SANTA_CRUZ\7.2_WORKING\MAP_DOCS\MXD\RIVER_BANK_FILTRATION\CULTURAL\ATTACHMENT_RESOURCES_RESULTS_CPS.MXD - USER: KTRAN - DATE: 2/6/2019

Traffic Technical Memorandum

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Memo

Date:	Friday, April 05, 2019
Project:	CPS Raw Water Pipeline Replacement Project
To:	Leslie Tice, Jon Boitano, Kevin Crossley
From:	David Petree and Sung Woo Jo
Subject:	SCWD CPS Construction Activities Traffic Impact Studies

Introduction

In support of the installation of a new 24-inch diameter, 531-foot raw water pipeline under, and adjacent to, the San Lorenzo River, traffic analysis was conducted using Synchro 10 traffic analysis software. This memorandum summarizes and compares the intersection operations under the 2019 Existing condition, and under the 2019 Construction condition, which is defined by an addition of construction.

Methodology and Assumptions

This analysis was conducted using Synchro 10 traffic analysis software which computes Level of Service (LOS) using the Highway Capacity Manual methodology.

This analysis focuses on the impact of construction activities during the construction period beginning August 2019 for 9 months. The 2019 Existing condition was developed to represent the existing traffic condition in the year 2019, and the 2019 Construction condition was developed to represent the existing condition with peak construction period. The PM peak hour (between 4 PM and 6 PM) generally has the highest number of trips compared to the AM peak hour (between 7 AM and 9 AM), and was considered the peak hour period for the analysis which follows the City of Santa Cruz guidance. The acceptable LOS is LOS D per city's current Transportation Impact Study Guidelines. A traffic impact study is required if a project is likely to generate 50 or more vehicle trips during the PM peak hour.

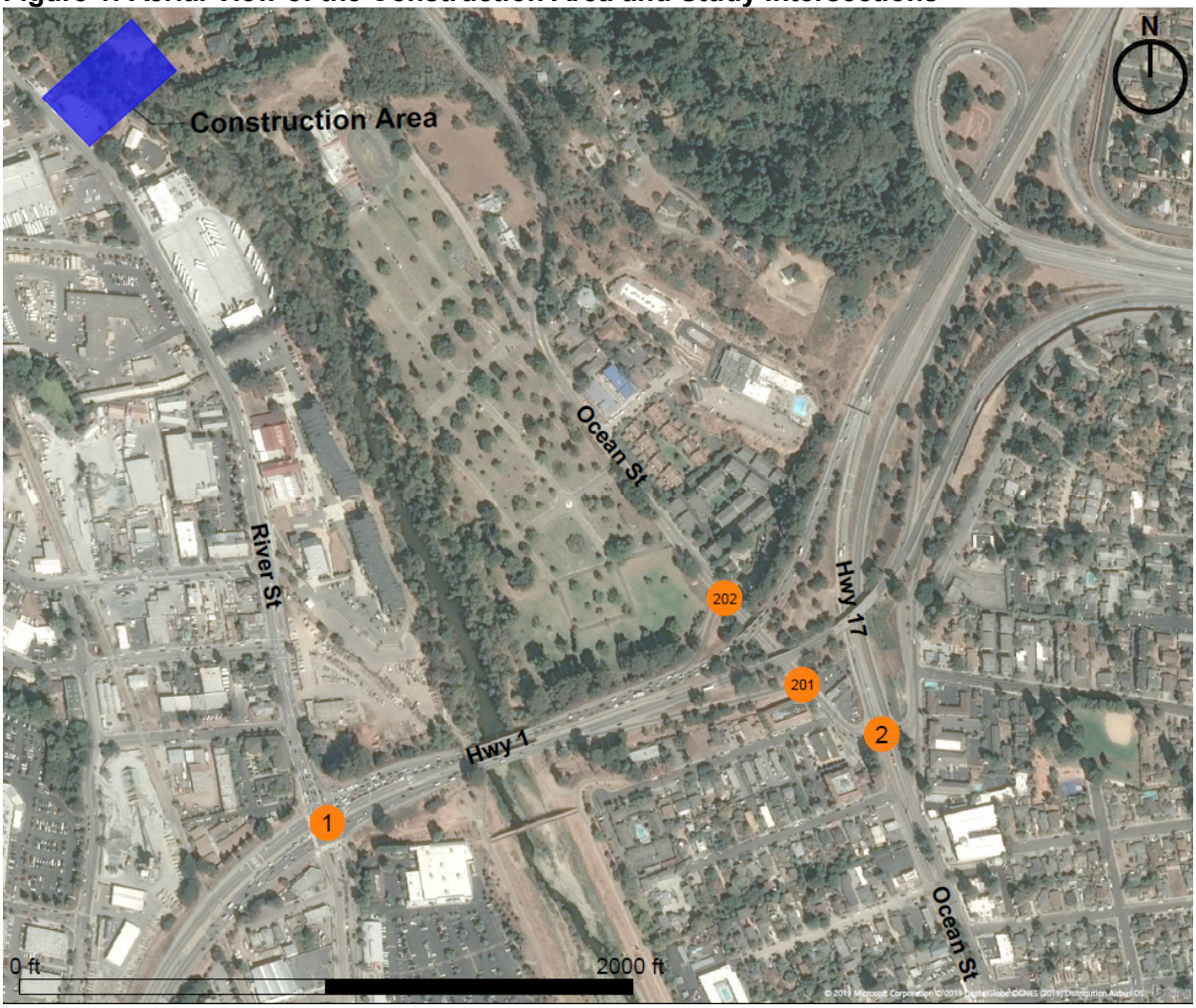
For the analysis, having all construction traffic leave the site during the PM peak hour was assumed as a worst-case scenario. This assumption is overly conservative as the heavy truck construction traffic would access the site throughout the day. The majority of construction deliveries would be during the morning and afternoon allowing adequate time to not impact the PM peak hour.

Figure 1 presents the location of the four study intersections (in orange) relative to the temporary construction area (in blue). The pipe installation was proposed to be performed at a temporary construction area on either side of San Lorenzo River, accessible through River Street on the west side and Ocean Street on the east side. Two signalized and two unsignalized intersections in the vicinity were analyzed for impacts by the construction activities:

- River Street and Highway 1 (#1)

- Ocean Street and Highway 17 (#2)
- Ocean Street and Highway 1 SB Off Ramp (#201)
- Ocean Street and Highway 1 NB On Ramp (#202).

Figure 1: Aerial View of the Construction Area and Study Intersections



The following references below provided 2014 turn movement counts for the selected intersections:

- 1930 Ocean Street Extension Residential Project Draft Environmental Report – Section 4.5
- Downtown Plan Amendments Draft Environmental Report – Section 4.7.

The annual growth rate of 1.4% was calculated by Caltrans annual average daily traffic (AADT) data from five different locations on Highway 1, River Street (Highway 9), and Highway 17. The 2014 tuning movement counts were grown to 2019 turning movement counts using the annual growth rate.

Table 1 summarizes the peak daily trip generation during the construction period. All construction truck trips represent heavy trucks, while employee trips represent passenger cars. To reflect the most conservative condition, it is assumed that all truck and employee trips depart the construction area during the PM peak hour. It is calculated that both sites will each generate 17 heavy truck trips and 10 passenger car trips during the PM peak hour.

Table 1: Peak Day Construction Trip Generation

Description	Trips from Construction
Pickup Truck	4
Heavy Semi Truck	2
Flat Bed Truck	2
Dump Truck	4
Refueling Truck	1
Cranes	2
Dewatering Truck	2
Heavy Truck Total	**17**
Employees	10
Passenger Car Total	**10**

The construction vehicles will need to access to the east and west sides of the San Lorenzo River. The construction traffic was assumed to use Highway 1 and Highway 17 to arrive in the general region. Ocean Street would be used to access the site when construction work occurs on the east side of the San Lorenzo River. River Street would be used to access the site when construction work occurs on the west side of the San Lorenzo River.

Conclusion

While the city's current guideline requires a traffic impact study for a project that would generate more than 50 trips during the PM peak hour, the construction activities are only anticipated to temporarily generate a maximum of 17 heavy truck trips and 10 passenger car trips. Thus, a preliminary analysis was conducted to evaluate a temporary impact of the future construction activities. **Table 2** presents the comparison of intersection delays in the study area during the PM peak hour. The construction activities are anticipated to increase intersection delays by approximately two seconds. All intersections will continue to operate at the same LOS as the 2019 Existing condition. Thus, the construction activities will have less than significant impacts.

Table 2: 2019 Existing and Construction Condition PM Peak Hour LOS Results and Comparisons

Ref #	Intersection	2019 Existing		2019 Construction		Difference
		Int. Delay	Int. LOS	Int. Delay	Int. LOS	
1	River St and Hwy 1	74.4	E	75.5	E	1.1
2	Ocean St and Hwy 17	44.0	D	46.0	D	2.0
201*	Ocean St and Hwy 1 SB Off Ramp	27.9	D	30.7	D	2.8
202*	Ocean St and Hwy 1 NB On Ramp	4.3	A	4.4	A	0.1

* Unsignalized intersections

References

- DEIR for General Plan 2030: http://www.cityofsantacruz.com/government/city-departments/planning-and-community-development/services/advance-planning/general-plan/draft-eir-for-the-draft-general-plan-2030
- City of Santa Cruz Transportation Impact Study Guidelines: http://www.cityofsantacruz.com/home/showdocument?id=27879
- 1930 Ocean Street Extension Residential Project Draft Environmental Report – Section 4.5: http://www.cityofsantacruz.com/Home/Components/BusinessDirectory/BusinessDirectory/96/1775?alpha=O
- Downtown Plan Amendments Draft Environmental Report – Section 4.7: http://www.cityofsantacruz.com/Home/Components/BusinessDirectory/BusinessDirectory/101/1775?alpha=D

Tribal Outreach

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NATIVE AMERICAN HERITAGE COMMISSION
Cultural and Environmental Department
1550 Harbor Blvd., Suite 100
West Sacramento, CA 95691
Phone: (916) 373-3710
Email: nahc@nahc.ca.gov
Website: http://www.nahc.ca.gov

June 25, 2019

John Lloyd
HDR, Inc.

VIA Email to: john.lloyd@hdrinc.com

RE: **Coast Pump Station Raw Water Pipeline Replacement Project**, City of Santa Cruz; Santa Cruz USGS Quadrangle, Santa Cruz County, California.

Dear Mr. Lloyd:

A record search of the Native American Heritage Commission (NAHC) Sacred Lands File (SLF) was completed for the information you have submitted for the above referenced project. The results were negative. The absence of specific site information in the SLF does not indicate the absence of cultural resources in any project area. Other sources of cultural resources should also be contacted for information regarding known and recorded sites.

Attached is a list of Native American tribes who may also have knowledge of cultural resources in the project area. This list should provide a starting place in locating areas of potential adverse impact within the proposed project area. I suggest you contact all of those indicated; if they cannot supply information, they might recommend others with specific knowledge. By contacting all those listed, your organization will be better able to respond to claims of failure to consult with the appropriate tribe. If a response has not been received within two weeks of notification, the Commission requests that you follow-up with a telephone call or email to ensure that the project information has been received.

If you receive notification of change of addresses and phone numbers from tribes, please notify the NAHC. With your assistance, we can assure that our lists contain current information. If you have any questions or need additional information, please contact me at my email address: gayle.totton@nahc.ca.gov.

Sincerely,

Gayle Totton

Gayle Totton, B.S., M.A., Ph.D.
Associate Governmental Program Analyst

Attachment

Native American Heritage Commission
Native American Contact List
Santa Cruz County
6/25/2019

Amah MutsunTribal Band
Valentin Lopez, Chairperson
P.O. Box 5272
Galt, CA, 95632
Phone: (916) 743 - 5833
vlopez@amahmutsun.org

Costanoan
Northern Valley
Yokut

Amah MutsunTribal Band of Mission San Juan Bautista
Irenne Zwierlein, Chairperson
789 Canada Road
Woodside, CA, 94062
Phone: (650) 851 - 7489
Fax: (650) 332-1526
amahmutsuntribal@gmail.com

Costanoan

Costanoan Ohlone Rumsen-Mutsun Tribe
Patrick Orozco, Chairman
644 Peartree Drive
Watsonville, CA, 95076
Phone: (831) 728 - 8471
yanapvoic97@gmail.com

Costanoan

Indian Canyon Mutsun Band of Costanoan
Ann Marie Sayers, Chairperson
P.O. Box 28
Hollister, CA, 95024
Phone: (831) 637 - 4238
ams@indiancanyon.org

Costanoan

Muwekma Ohlone Indian Tribe of the SF Bay Area
Charlene Nijmeh, Chairperson
20885 Redwood Road, Suite 232
Castro Valley, CA, 94546
Phone: (408) 464 - 2892
cnijmeh@muwekma.org

Costanoan

This list is current only as of the date of this document. Distribution of this list does not relieve any person of statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resource Section 5097.98 of the Public Resources Code.

This list is only applicable for contacting local Native Americans with regard to cultural resources assessment for the proposed Coast Pump Station Raw Water Pipeline Replacement Project, Santa Cruz County.

July 02, 2019

Amah Mutsun Tribal Band
Valentin Lopez, Chairperson
P.O. Box 5272
Galt, CA 95632

RE: Coast Pump Station Raw Water Pipeline Replacement Project, Santa Cruz, California.

Dear Mr. Lopez,

HDR, Inc. (HDR) was retained by the City of Santa Cruz Water Department to complete a cultural resources assessment for a project that proposed to replace a segment of existing raw water pipeline within the City of Santa Cruz. Below please find a description of the proposed Project, a map showing the Project location, and the name of our Project point of contact.

The proposed Project would involve the replacement of a raw water pipeline segment that runs under the San Lorenzo River in the city of Santa Cruz (City). Construction of the segment would utilize microtunneling to drill an approximately 221-foot west-to-east tunnel under the river within which the replacement 24-inch diameter pipeline would be installed. This new pipeline would be connected to the existing water conveyance system on the east and west banks of the river, each side connected via approximately 150 feet of piping connected via open trenching. The old pipeline segment would be capped and abandoned in place.

The Project is located on the northern side of the city of Santa Cruz (Figure 1). The west side of the Project connects with the City's Coast Pump Station and runs along the contiguous property to the north. The east side of the Project surfaces east of the San Lorenzo River at the western terminus of Crossing Street, Santa Cruz, 95060. The Project footprint is primarily on City-owned and publicly owned land, with the exception of optional staging on the privately-owned Santa Cruz Cemetery property. The City is coordinating with this land owner.

HDR, as a consultant representing the City, is contacting you regarding the proposed Project. At this time, we are requesting any information you may have regarding

hdrinc.com

2379 Gateway Oaks Drive, Suite 200, Sacramento, CA 95833-4240
(916) 679-8700

archaeological sites, traditional cultural properties, values, or other cultural resource considerations within the proposed Project area so this information may be incorporated into the planning phase of the proposed Project.

A resource database search from the Northwest Information Center at Sonoma State University did not reveal any previously recorded archaeological sites or historic built environment resources within the Project area. A search of the Native American Heritage Commission's Sacred Lands File was also negative.

Please direct any comments, questions, concerns, or requests for further information to:

Sarah Easley Perez	or	John "Jay" Lloyd
City of Santa Cruz Water Department		HDR, Inc.
seasleyperez@cityofsantacruz.com		john.lloyd@hdrinc.com
(831) 420-5327		(559) 287-2137

We understand that you may have concerns regarding the confidentiality of information on areas or resources of religious, traditional, and cultural importance. We would be happy to discuss these concerns and develop procedures to ensure the confidentiality of such information is maintained.

Sincerely,

John "Jay" Lloyd
Senior Cultural Resources Specialist

July 02, 2019

Amah Mutsun Tribal Band of Mission San Jaun Bautista
Irenne Zwierlein, Chairperson
789 Canada Road
Woodside, CA 94062

RE: Coast Pump Station Raw Water Pipeline Replacement Project, Santa Cruz, California.

Dear Ms. Zwierlein,

HDR, Inc. (HDR) was retained by the City of Santa Cruz Water Department to complete a cultural resources assessment for a project that proposed to replace a segment of existing raw water pipeline within the City of Santa Cruz. Below please find a description of the proposed Project, a map showing the Project location, and the name of our Project point of contact.

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John "Jay" Lloyd
Senior Cultural Resources Specialist

July 02, 2019

Costanoan Ohlone Rumsen-Mutsen Tribe
Patrick Orozco, Chairperson
611 Peartree Drive
Watsonville, CA 95076

RE: Coast Pump Station Raw Water Pipeline Replacement Project, Santa Cruz, California.

Dear Mr. Orozco,

HDR, Inc. (HDR) was retained by the City of Santa Cruz Water Department to complete a cultural resources assessment for a project that proposed to replace a segment of existing raw water pipeline within the City of Santa Cruz. Below please find a description of the proposed Project, a map showing the Project location, and the name of our Project point of contact.

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Sincerely,

John "Jay" Lloyd
Senior Cultural Resources Specialist

July 02, 2019

Indian Canyon Mutsun Band of Costanoan
Ann Marie Sayers, Chairperson
P.O. Box 28
Hollister, CA 95024

RE: Coast Pump Station Raw Water Pipeline Replacement Project, Santa Cruz, California.

Dear Ms. Sayers,

HDR, Inc. (HDR) was retained by the City of Santa Cruz Water Department to complete a cultural resources assessment for a project that proposed to replace a segment of existing raw water pipeline within the City of Santa Cruz. Below please find a description of the proposed Project, a map showing the Project location, and the name of our Project point of contact.

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Sincerely,

John "Jay" Lloyd
Senior Cultural Resources Specialist

July 02, 2019

Muwekma Ohlone Indian Tribe of the SF Bay Area
Charlene Nijmeh, Chairperson
20885 Redwood Road, Suite 232
Castro Valley, CA 94546

RE: Coast Pump Station Raw Water Pipeline Replacement Project, Santa Cruz, California.

Dear Ms. Nijmeh,

HDR, Inc. (HDR) was retained by the City of Santa Cruz Water Department to complete a cultural resources assessment for a project that proposed to replace a segment of existing raw water pipeline within the City of Santa Cruz. Below please find a description of the proposed Project, a map showing the Project location, and the name of our Project point of contact.

The proposed Project would involve the replacement of a raw water pipeline segment that runs under the San Lorenzo River in the city of Santa Cruz (City). Construction of the segment would utilize microtunneling to drill an approximately 221-foot west-to-east tunnel under the river within which the replacement 24-inch diameter pipeline would be installed. This new pipeline would be connected to the existing water conveyance system on the east and west banks of the river, each side connected via approximately 150 feet of piping connected via open trenching. The old pipeline segment would be capped and abandoned in place.

The Project is located on the northern side of the city of Santa Cruz (Figure 1). The west side of the Project connects with the City's Coast Pump Station and runs along the contiguous property to the north. The east side of the Project surfaces east of the San Lorenzo River at the western terminus of Crossing Street, Santa Cruz, 95060. The Project footprint is primarily on City-owned and publicly owned land, with the exception of optional staging on the privately-owned Santa Cruz Cemetery property. The City is coordinating with this land owner.

HDR, as a consultant representing the City, is contacting you regarding the proposed Project. At this time, we are requesting any information you may have regarding

hdrinc.com

2379 Gateway Oaks Drive, Suite 200, Sacramento, CA 95833-4240
(916) 679-8700

archaeological sites, traditional cultural properties, values, or other cultural resource considerations within the proposed Project area so this information may be incorporated into the planning phase of the proposed Project.

A resource database search from the Northwest Information Center at Sonoma State University did not reveal any previously recorded archaeological sites or historic built environment resources within the Project area. A search of the Native American Heritage Commission's Sacred Lands File was also negative.

Please direct any comments, questions, concerns, or requests for further information to:

Sarah Easley Perez	or	John "Jay" Lloyd
City of Santa Cruz Water Department		HDR, Inc.
seasleyperez@cityofsantacruz.com		john.lloyd@hdrinc.com
(831) 420-5327		(559) 287-2137

We understand that you may have concerns regarding the confidentiality of information on areas or resources of religious, traditional, and cultural importance. We would be happy to discuss these concerns and develop procedures to ensure the confidentiality of such information is maintained.

Sincerely,

John "Jay" Lloyd
Senior Cultural Resources Specialist

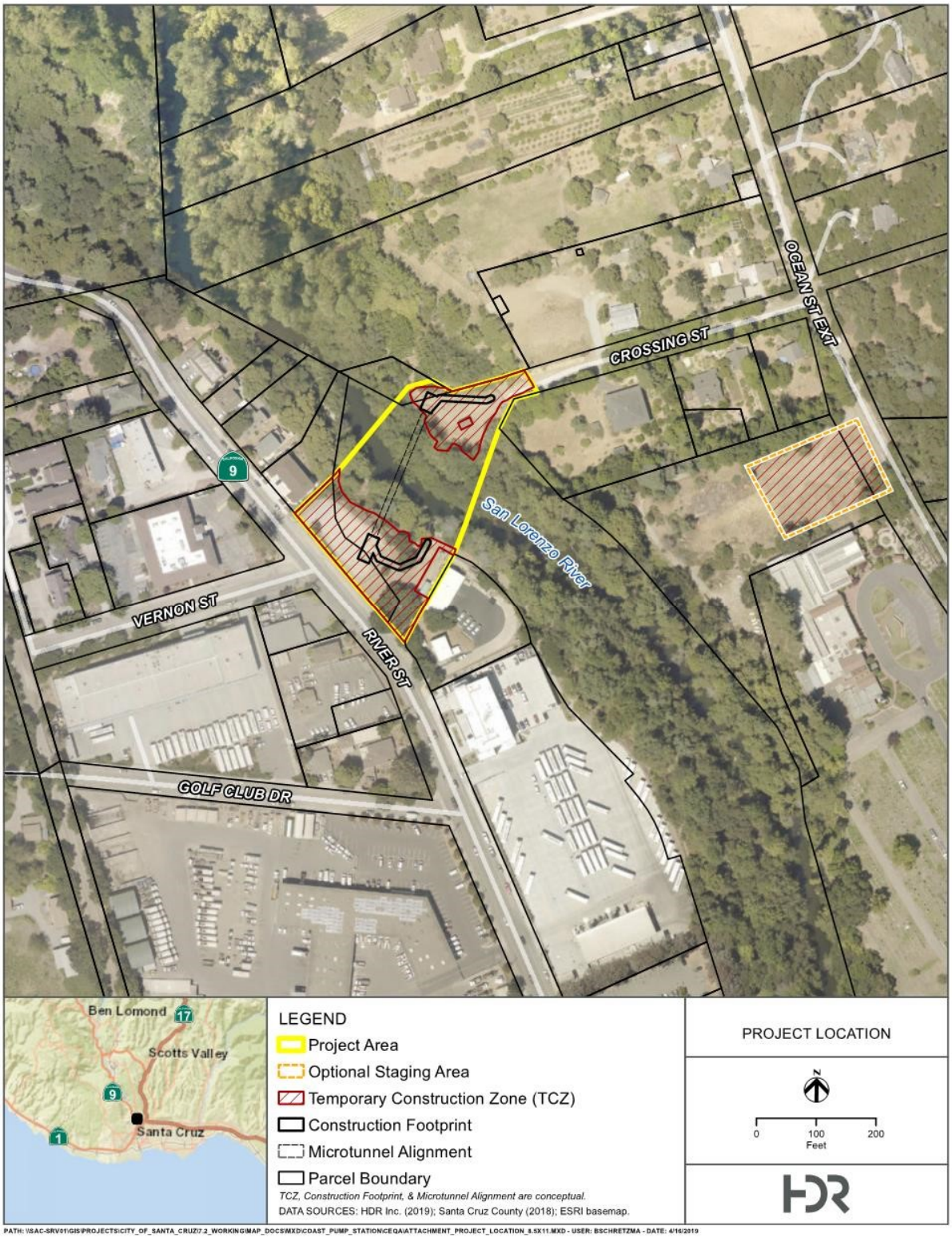

Figure 1. Project Location.

From: Rob Cuthrell [mailto:rcuthrell@amahmutsun.org]
Sent: Tuesday, July 23, 2019 3:08 PM
To: Sarah Easley Perez <seasleyperez@cityofsantacruz.com>; john.lloyd@hdrinc.com
Cc: Valentin Lopez <vjltestingcenter@aol.com>; Aerieways <aerieways@aol.com>
Subject: Consultation Request - Coast Pump Station Raw Water Pipeline Replacement Project

Dear Ms. Perez and Mr. Lloyd

I write on behalf of Amah Mutsun Tribal Band in response to your letter of July 2, 2019 regarding the proposed Coast Pump Station Raw Water Pipeline Replacement Project in Santa Cruz.

The proposed project is located within the traditional territory of Amah Mutsun Tribal Band, and the Tribe requests further consultation under AB 52 and PRC 21080.3.1 as the project progresses. Although we do not have additional information to provide about specific indigenous cultural resource in the project's area of potential impact, the Tribe considers areas within 400 feet of permanent water sources to have high potential for indigenous cultural resources. The Tribe requests engagement of a qualified Native American monitor during any subsurface construction activities associated with this project if it moves forward.

As the project progresses, please email Valentin Lopez (vjltestingcenter@aol.com), Ed Ketchum (aerieways@aol.com), and me (rcuthrell@amahmutsun.org) to coordinate consultation.

Regards,

Rob Cuthrell, Ph.D.
Director of Archaeological Resource Management
Amah Mutsun Land Trust

cc. Valentin Lopez, Chair, Amah Mutsun Tribal Band
cc. Ed Ketchum, Vice Chair, Amah Mutsun Tribal Band

CITY OF SANTA CRUZ

WATER DEPARTMENT
212 Locust Street, Suite C, Santa Cruz, CA 95060 • Ph: 831-420-5210

July 30, 2019

Valentin Lopez
Chair, Amah Mutsun Tribal Band
PO Box 5272
Galt, CA 95632

RE: Coast Pump Station Raw Water Pipeline Replacement Project, Santa Cruz, California; Formal Notification of AB 52 Consultation for Tribal Cultural Resources under the California Environmental Quality Act (CEQA)

Dear Mr. Lopez:

The City of Santa Cruz Water Department received an email on July 23, 2019 from Dr. Rob Cuthrell on behalf of the Amah Mutsun Tribal Band requesting formal AB 52 consultation. As such, please consider this correspondence the initiation of our Tribal cultural resources consultation for the *Coast Pump Station Raw Water Pipeline Replacement Project* (Project).

The City of Santa Cruz Water Department's staff would like to meet with you to discuss this project and AB 52 compliance at your earliest convenience.

The City of Santa Cruz Water Department understands that Tribal information submitted to our agency shall be kept confidential (PRC §21082.3(c)(1)). The purpose of AB 52 consultation is to obtain Tribal expertise on the subject Project area (PRC §21080.3.1(a)) via Tribal submittal of comments, information, and/or project design measures.

Pursuant to PRC § 21080.3.1 (d), a description of the Project and map showing Project location were included in previous correspondence. The Project's Point of Contact is:

Sarah Easley Perez, Associate Planner
City of Santa Cruz Water Department
seasleyperez@cityofsantacruz.com
(831) 420-5327

Thank you for your time. We look forward to meeting with you.

Very Respectfully,

Rosemary Menard
Water Director

Cc: Ed Ketchum, Vice Chair, Amah Mutsun Tribal Band
Dr. Rob Cuthrell, Director of Archaeological Resource Management, Amah Mutsun Land Trust
Sarah Easley Perez, Associate Planner, City of Santa Cruz Water Department

Print Form

Form F

Sample Summary for Electronic Document Submittal

15 copies of this document may be included when a Lead Agency is submitting electronic copies of environmental impact reports, negative declarations, mitigated negative declarations, or notices of preparation to the SCH. The SCH will still accept other summaries, such as an EIR summary prepared pursuant to CEQA Guidelines Section 15123, attached to the electronic copies of the document.

SCH # _____

Lead Agency: City of Santa Cruz Water Department

Project Title: Coast Pump Station Raw Water Pipeline Replacement Project

Project Location: Santa Cruz (*City*) Santa Cruz (*County*)

Please provide a Project Decription (Proposed Actions, location, and/or consequences).

The City of Santa Cruz Water Department proposes to replace approximately 525 feet of the Coast Pump Station raw water pipeline in a segment aligned under the San Lorenzo River in Santa Cruz, CA (Figure 1). This segment of the existing pipeline varies in diameter and includes portions that are both 20 and 24 inches in diameter. The replacement pipeline would have a single diameter of 24 inches. The replacement 24 inch diameter pipeline would provide a negligible increase in capacity and would connect to existing points at each end of the segment proposed for replacement. The existing pipeline would remain in use until the new pipeline segment is operational, at which point the existing pipeline segment would be capped and abandoned in place.

Approximately 225 feet of the replacement pipeline would be aligned under the San Lorenzo River and installed within a 36-inch-diameter carrier steel casing via microtunnel technology. The proposed microtunnel is aligned approximately 80 feet north of the existing pipeline and is adjacent to two treated water pipelines that would not be affected by the proposed project. The location of the proposed replacement pipeline was selected based on environmental constraints, operational constraints, geotechnical feasibility, and optimal constructability. The microtunnel alignment was sited to avoid existing utilities and was sited where conditions were optimal for this type of construction.

(Continued on Attachment.)

Please identify the project's significant or potentially significant effects and briefly describe any proposed mitigation measures that would reduce or avoid that effect.

The following mitigation measures have been identified during the evaluation of environmental resources to reduce all impacts that could result from project implementation to less than significant. These measures are referenced, as appropriate, in the assessments of individual resources included in Evaluation of Environmental Impacts section of the attached Initial Study. These mitigation measures are further described in the attached Initial Study.

MM-BIO-1: Biological Monitoring and Worker Environmental Awareness Training.
MM-BIO-2: Pre-construction Clearance Surveys.
MM-BIO-3: Wildlife Entrapment Avoidance.
MM-BIO-4: Migratory Bird, Special-status Bird, and Raptor Surveys.
MM-BIO-5: Nesting Bird Avoidance.
MM-BIO-6: No Net Loss of Riparian Canopy.
MM-BIO-7: Tree Avoidance
MM-BIO-8: Minimization of Root Damage.
MM-CUL-1: Personnel Training and Development of Monitoring Program by Archaeologist.
MM CUL-2: Archaeological and Tribal Monitoring.
MM-CUL-3: Human Remains.
MM-GEO-1: Paleontological Resources.
MM-NOI-1: Machinery Maintenance.
MM-NOI-2: Nighttime Machinery.
MM-NOI-3: Construction Noise Coordinator.

~~Added~~ 2010

If applicable, please describe any of the project's areas of controversy known to the Lead Agency, including issues raised by agencies and the public.

Although construction impacts would be short term and temporary, the potential for impacts to nearby residents due to increased noise levels during limited night time construction would be mitigated during Project microtunneling. Mitigation measures will also be incorporated to preserve biological resources. Finally, the addition of stormwater BMPs and mitigation measures would alleviate increased erosion and sedimentation rates on nearby residential properties and in the San Lorenzo River.

Please provide a list of the responsible or trustee agencies for the project.

California Department of Fish and Wildlife, Bay Delta Region (Region 3)
Regional Water Quality Control Board, Construction General Permit

Project Description

(Continued) The remaining 300 feet of pipeline would be installed via open trenching on the east and west sides (approximately 150 feet on each side) of the river and would connect the microtunnel segment to the existing end points.

The existing pipeline is one of the primary transmission lines for water supply to the Graham Hill Water Treatment Plant. The current pipeline is degraded and has a history of leaking. The proposed project is needed in order to fix this critical pipeline segment and prevent further leaks and damage.

The project footprint is primarily on City-owned and publicly owned land, with the exception of a possible secondary staging on the property owned by the Santa Cruz Cemetery Corporation. The Water Department is coordinating with this private land owner.

A construction period of approximately 8 to 9 months is planned, scheduled to begin in the spring of 2020. Estimated work hours are from 8 am to 6 pm, Monday through Friday. Limited nighttime construction activities could occur over a matter of days; this would be limited to courses of continual daytime and nighttime work during microtunneling operations to avoid tunnel failure. Nighttime work would be limited to what is minimally required to complete the project within the proposed schedule.

Notice of Completion & Environmental Document Transmittal

Mail to: State Clearinghouse, P.O. Box 3044, Sacramento, CA 95812-3044 (916) 445-0613
For Hand Delivery/Street Address: 1400 Tenth Street, Sacramento, CA 95814

SCH #

Project Title: Coast Pump Station Raw Water Pipeline Replacement Project

Lead Agency: City of Santa Cruz Water Department | Contact Person: Jessica Martinez-McKinney

Mailing Address: 212 Locust Street, Suite C | Phone: (831) 420-5322

City: Santa Cruz | Zip: 95060 | County: Santa Cruz

Project Location: County: Santa Cruz | City/Nearest Community: Santa Cruz

Cross Streets: River Street, Ocean Street Extension and Crossing Street | Zip Code: 95060

Longitude/Latitude (degrees, minutes and seconds): 36 ° 59 ′ 28 ″ N / 122 ° 1 ′ 52 ″ W | Total Acres: Less than 2.2

Assessor's Parcel No.: 008-032-01, 008-012-07, 060-192-15 (right-of-way), and 008-031-16 | Section: 11S | Twp.: 2W | Range: 12 | Base: Mt. Diablo

Within 2 Miles: State Hwy #: 1, 9, 17 | Waterways: San Lorenzo River

Airports: None | Railways: Roaring Camp and Big Trees Line | Schools: See Attachment

Document Type:

CEQA: ☐ NOP ☐ Draft EIR | NEPA: ☐ NOI | Other: ☐ Joint Document
☐ Early Cons ☐ Supplement/Subsequent EIR | ☐ EA | ☐ Final Document
☐ Neg Dec (Prior SCH No.) _____ | ☐ Draft EIS | ☐ Other: _____
☒ Mit Neg Dec Other: _____ | ☐ FONSI

Local Action Type:

☐ General Plan Update ☐ Specific Plan ☐ Rezone ☐ Annexation
☐ General Plan Amendment ☐ Master Plan ☐ Prezone ☐ Redevelopment
☐ General Plan Element ☐ Planned Unit Development ☐ Use Permit ☐ Coastal Permit
☐ Community Plan ☐ Site Plan ☐ Land Division (Subdivision, etc.) ☒ Other: Utility Replacement

Development Type:

☐ Residential: Units _____ Acres _____
☐ Office: Sq.ft. _____ Acres _____ Employees _____
☐ Commercial: Sq.ft. _____ Acres _____ Employees _____
☐ Industrial: Sq.ft. _____ Acres _____ Employees _____
☐ Educational: _____
☐ Recreational: _____
☒ Water Facilities: Type Raw Water MGD _____
☐ Transportation: Type _____
☐ Mining: Mineral _____
☐ Power: Type _____ MW _____
☐ Waste Treatment: Type _____ MGD _____
☐ Hazardous Waste: Type _____
☐ Other: _____

Project Issues Discussed in Document:

☒ Aesthetic/Visual ☐ Fiscal ☒ Recreation/Parks ☒ Vegetation
☒ Agricultural Land ☒ Flood Plain/Flooding ☐ Schools/Universities ☒ Water Quality
☒ Air Quality ☐ Forest Land/Fire Hazard ☐ Septic Systems ☐ Water Supply/Groundwater
☒ Archeological/Historical ☒ Geologic/Seismic ☐ Sewer Capacity ☒ Wetland/Riparian
☒ Biological Resources ☒ Minerals ☒ Soil Erosion/Compaction/Grading ☒ Growth Inducement
☐ Coastal Zone ☒ Noise ☐ Solid Waste ☒ Land Use
☒ Drainage/Absorption ☒ Population/Housing Balance ☒ Toxic/Hazardous ☒ Cumulative Effects
☐ Economic/Jobs ☒ Public Services/Facilities ☒ Traffic/Circulation ☐ Other: _____

Present Land Use/Zoning/General Plan Designation:

The proposed project area is zoned for floodplain, residential, industrial, and public facilities by the City of Santa Cruz.

Project Description: *(please use a separate page if necessary)*

See Attached.

Note: The State Clearinghouse will assign identification numbers for all new projects. If a SCH number already exists for a project (e.g. Notice of Preparation or previous draft document) please fill in.

Reviewing Agencies Checklist

Lead Agencies may recommend State Clearinghouse distribution by marking agencies below with and "**X**".
If you have already sent your document to the agency please denote that with an "**S**".

X	Air Resources Board	X	Office of Historic Preservation
	Boating & Waterways, Department of		Office of Public School Construction
	California Emergency Management Agency		Parks & Recreation, Department of
X	California Highway Patrol		Pesticide Regulation, Department of
X	Caltrans District # 5	X	Public Utilities Commission
	Caltrans Division of Aeronautics	X	Regional WQCB # 3
	Caltrans Planning		Resources Agency
	Central Valley Flood Protection Board		Resources Recycling and Recovery, Department of
	Coachella Valley Mtns. Conservancy		S.F. Bay Conservation & Development Comm.
	Coastal Commission		San Gabriel & Lower L.A. Rivers & Mtns. Conservancy
	Colorado River Board		San Joaquin River Conservancy
	Conservation, Department of		Santa Monica Mtns. Conservancy
	Corrections, Department of		State Lands Commission
	Delta Protection Commission		SWRCB: Clean Water Grants
	Education, Department of	X	SWRCB: Water Quality
	Energy Commission		SWRCB: Water Rights
S	Fish & Game Region # 3		Tahoe Regional Planning Agency
	Food & Agriculture, Department of		Toxic Substances Control, Department of
	Forestry and Fire Protection, Department of	X	Water Resources, Department of
	General Services, Department of		
	Health Services, Department of	S	Other: Amah Mutsun Tribal Band
	Housing & Community Development		Other:
X	Native American Heritage Commission		

Local Public Review Period (to be filled in by lead agency)

Starting Date August 5, 2019 Ending Date September 4, 2019

Lead Agency (Complete if applicable):

Consulting Firm: HDR Engineering
Address: 100 Pringle Avenue, Suite 400
City/State/Zip: Walnut Creek, CA 94596
Contact: Leslie Tice
Phone: (925) 974-2561

Applicant: City of Santa Cruz Water Department
Address: 212 Locust Street, Suite C
City/State/Zip: Santa Cruz, CA 95060
Phone: (831) 420-5220

Signature of Lead Agency Representative: Heidi Luckenbach Digitally signed by Heidi Luckenbach DN: cn=Heidi Luckenbach, o=City of Santa Cruz, ou=City of Santa Cruz, email=hluckenbach@cityofsantacruz.com, c=US Date: 2019.08.01 15:28:12 -07'00' **Date:** 8/1/2019

Authority cited: Section 21083, Public Resources Code. Reference: Section 21161, Public Resources Code.

Schools

Kirby School, Holy Cross School, Westlake Elementary, Mission Hills Middle School, Santa Cruz High School, Branciforte Middle School, Gault Elementary School, Star Community School, Santa Cruz Children's School, Alternative Family Education School.

Project Description

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The project footprint is primarily on City-owned and publicly owned land, with the exception of a possible secondary staging on the property owned by the Santa Cruz Cemetery Corporation. The Water Department is coordinating with this private land owner.

After microtunneling and open trenching operations are completed, the drill pits and trenches would be backfilled. Previously excavated uncontaminated soils and debris stored on site would be used to backfill the drill pits and trenches. Construction debris and excess material requiring disposal in a landfill would be hauled off site to a suitable facility. All exposed and/or disturbed areas resulting from construction activities would be returned to their original contour and grade, and vegetated areas would be restored using locally appropriate native grass and forb seeds. Seeded areas would be covered with broadcast straw and/or jute-netted.

A construction period of approximately 8 to 9 months is planned, currently scheduled to begin in the spring of 2020. Estimated work hours are from 8 am to 6 pm, Monday through Friday. Limited nighttime construction activities could occur over a matter of days; this would be limited to courses of continual daytime and nighttime work during microtunneling operations to avoid tunnel failure. Nighttime work would be limited to what is minimally required to complete the project within the proposed schedule.

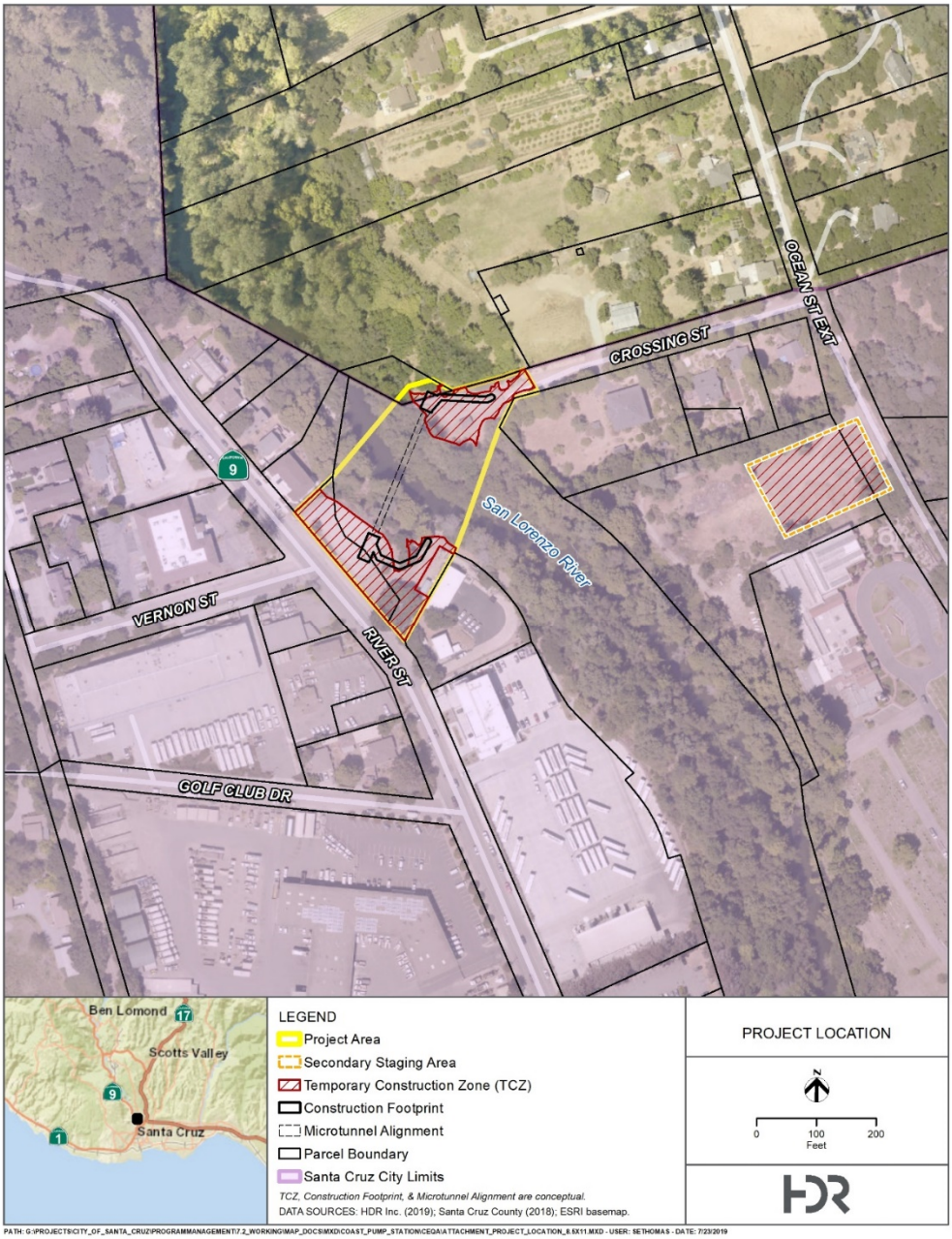

Figure 1. Proposed Project Location